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No. 2

THE JOURNAL]
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FEBRUARY 9TH, 1892.

E. W. BRABROOK, Esq., F.S.A., *Vice-President, in the Chair.*

The Minutes of the last meeting were read and signed.

The following presents were announced, and thanks voted to the respective donors:—

FOR THE LIBRARY.

- From the AUTHOR.—The Right Hand: Lefthandedness. By Sir Daniel Wilson. 8vo. London, 1891, pp. x, 215.
— The Evolution of Mind in Man. By Henry Benedict Medlicott. 8vo. London, 1892. pp. 48.
— Sumpitan and Bow in Indonesia. By C. M. Pleyte, Wzn. 4to. Leiden, 1891. pp. 17. Plates.
— Neue Beiträge zur Kenntniß des Nephrit und Jadeit. By A. B. Meyer. 4to. Berlin, 1891. pp. 42. Plates.
— A Chat about the Aborigines of Tasmania; and some Notes on the Shell-Mounds at Little Swanport. By Alfred J. Taylor. 8vo. Hobart (1891). pp. 23.
— Die Philippinen. By A. B. Meyer, and A. Schadenberg. Fol. Dresden, 1890. pp. 26. Illustrated.
From the PUBLISHERS.—Anthropological Religion. By F. Max Müller, K.M. 8vo. (Longman, Green, and Co.) London, 1892. pp. xxvii, 464.
— Popular Tales of the West Highlands. Vol. iii. By J. F. Campbell. 8vo. (Alex. Gardner.) Paisley and London, 1892. pp. xiv, 440.

- From the ÉCOLE D'ANTHROPOLOGIE DE PARIS.—*Revue Mensuelle*, 1892. No. 1.
- From the INDIA OFFICE.—*Epigraphia Indica and Record of the Archaeological Survey of India*. Vol. i. Part 8.
- From the UNITED STATES GEOLOGICAL SURVEY.—*Bulletin*. Nos. 62, 63, 67-81; Annual Report X (1888-89).
- From the ACADEMIE DES SCIENCES DE CRACOVIE.—*Bulletin Internationale*, 1891. No. 10.
- From the ACADEMIE IMPÉRIALE DES SCIENCES DE ST. PÉTERSBOURG.—*Mélanges Biologiques tirés du Bulletin de l'Académie Impériale des Sciences de St. Pétersbourg*. Tome XIII. Liv. 1.
- From the KONGL. VITTSKJUTS HISTORISCH OCH ANTIKVITETSKA AKADEMIEN (Stockholm).—*Antiquvarisk Tidskrift för Sverige*. Del. VIII. 3, 4; IX. 3; X. 6; XI. 4.
- From the ROYAL IRISH ACADEMY (Dublin).—*Transactions*. Vol. XXIX. 17.
- From the ESSEX FIELD CLUB.—*The Essex Naturalist*. Vol. v. Nos. 7, 8, 9-11.
- From the EDITOR.—*L'Anthropologie*. Tome ii. No. 6.
— *Bullettino di Paleontologia Italiana*. Tom. vii. N. 8-10.
— *Internationales Archiv für Ethnographie*. Band iv. Heft 6.
— *Nature*. Nos. 1159-1162.
— *Revista Argentina de Historia Natural*. Tom. i. Est. 6.
— *Revue Scientifique*. Tom. xlix. Nos. 2-6.
— *Science*. Nos. 464-468.
— *The American Journal of Psychology*. Vol. iv. No. 2.
- From the KOSINKELIJE INSTITUUT VOOR DE TAAL-, LAND- EN VOLKENKUNDE VAN NEDERLANDSCH-INDIE.—*Bijdragen tot de Taal-, Land- en Volkenkunde van Nederlandsch-Indië*. Deel VII. Af. 1.
- From the BERLINER GESELLSCHAFT FÜR ANTHROPOLOGIE, ETHNOLOGIE UND UMGESCHICHTE.—*Zeitschrift für Ethnologie*. 1891. Heft 5.
- From the FOLK-LORE SOCIETY.—*Folk-Lore*. Vol. ii. No. 4.
- From the ROYAL GEOGRAPHICAL SOCIETY.—*Proceedings*. Vol. XIV. No. 1.
- From the ROYAL SCOTTISH GEOGRAPHICAL SOCIETY.—*The Scottish Geographical Magazine*. Vol. viii. No. 2.
- From the ROYAL SOCIETY.—*Proceedings*. Nos. 303, 304.
- From the ROYAL STATISTICAL SOCIETY.—*Journal*. Vol. liv. Parts 3, 4.
- From the SOCIÉTÉ D'ANTHROPOLOGIE DE BRUXELLES.—*Bulletin*. Tom. IV.
- From the SOCIÉTÉ D'ANTHROPOLOGIE DE PARIS.—*Bulletins*. 1891. Part 3.
- From the SOCIÉTÉ ARCHÉOLOGIQUE (Agram).—*Vjesnik hrvatskoga Arkeološkoga Družstva*. Godina xiv. Br. 1.
- From the SOCIETY OF ARTS.—*Journal*. Nos. 2042-2046.
- From the SOCIETY OF BIBLICAL ARCHAEOLOGY.—*Proceedings*. Vol. xiv. Part 3.

Mr. M. J. WALHOUSE exhibited some articles and implements of every day use among the Chin Tribes, on the Burmese and Chinese Frontier.

Captain E. S. HASTINGS exhibited the Skull of a Chin Dacoit Leader, upon which Dr. GARSON made some remarks.

A paper on "The Exploration of Howe Hill Barrow, Duggleby, Yorkshire," by Mr. J. R. MORTIMER, was read by Dr. GARSON.

Dr. J. G. GARSON read a paper on "The Human Remains found in Howe Hill Barrow."

Mr. E. W. BRABROOK, Mr. R. B. HOLT, Mr. T. V. HOLMES, Mr. A. L. LEWIS, Mr. G. M. ATKINSON, and Mr. H. BALFOUR joined in the discussion, and the Author replied.

*An ACCOUNT of the EXPLORATION of HOWE HILL BARROW,
DUGGLEBY, YORKSHIRE.*

Abstracted from a Paper by the Explorer, J. R. MORTIMER,
of Driffield.¹

THE large flat-topped circular Barrow known as "Howe Hill" stands on the hill-side, a short distance south-east of the village of Duggleby. It measures 125 feet in diameter at the base, 47 feet across the top, and 22 feet in height at the east, and 19 feet at the west side. The rising slope of the hill on which it stands is on the south side. It resembles in size and form two other barrows in the same neighbourhood, namely, "Muckle Head," 9 miles south-west of Duggleby at the foot of Garolly Hill, which has not been explored, and "Willy Howe," near Wold Newton, 11 miles east, which was examined by Lord Londesborough in 1857, and again in 1887 by Canon Greenwell, but on neither occasion were any human remains obtained from it. The Howe Hill Barrow was first opened by the Rev. Christopher Sykes in 1798, but there does not appear to be any account of the results obtained from it extant, and there is no tradition in the neighbourhood of anything having been found. During the summer of 1890, Mr. J. R. Mortimer was able to explore it, through the munificence of Sir Tatton Sykes, Bart., who supplied the funds necessary for the purpose.

¹ This paper is published in full, with five lithograph plates of the barrow and the various reliefs it contained, in the "Proceedings of the Yorkshire Geological and Polytechnic Society," vol. xii, part 2, 1892, p. 215 et seq.

The plan adopted by Mr. Mortimer in his exploration was to open an area, over the centre of the barrow, 40 feet in diameter from north to south, and 77 feet from east to west, but narrowing towards the east to 27 feet.

In the upper 5 feet of soil removed from the centre of the area and chiefly in the filling-in earth from the former excavation the following articles were found; a few nails and flat pieces of iron (much corroded), one side of a pair of shears, the pointed end of a bone pin, a piece of bone apparently part of the side of an Anglo-Saxon comb, twenty-five flint flakes some of which were variously shaped by chipping, a punch-shaped tool 2½ inches long, a portion of a well-toothed double-edged flaked saw, and a very thin sharply pointed knife, 2 inches long, of light coloured native flint, the natural surface of which forms one side of the knife while the other side has been formed by removing four flakes. There was also found a large core of black flint from which four flakes had been struck, but as the grain of the flint is twisted, it had probably been rejected and subsequently used as a hammer; 250 potsherds, consisting of one small piece of British ware; some pieces of Roman and Anglo-Saxon vessels; several portions of vessels belonging to a more recent period, of which some were glazed others unglazed; several pieces of sand and grit stone, all more or less reddened by the action of fire. The following organic remains were found; the bones and fifteen teeth of horse in disturbed soil; five teeth of ox; part of the mandible of goat; two mandibles of a small kind of dog or fox; some teeth, and portions of the antler of red deer. Some human remains were found here, consisting of the greater part of a mandible, and several portions of a large femur and of a small one, both of which had been deeply cut into, probably in the previous exploration.

As the exploration was carried to a depth of 9 feet from the top, it was found that the utmost limits of the previous excavation had been reached. There appeared to have been trenches dug in the form of a cross in the centre of the mound, such as have been found in other barrows in Yorkshire, but these did not extend quite to this depth. Two of the arms of the cross-like trenches which had not been undisturbed by the previous exploration contained pure clay, a brick-like piece of limestone, and a piece of grit-stone which seems to have had a circular hollow cut in the middle of it. This second section contained parts of two human skeletons, which had been previously disturbed; portions of skulls and other bones of two large dogs; portion of the hoof and some bones of an ox; four teeth of horse and two pieces of burnt bone. One portion of

the leg bone of the ox had a round hole, half an inch in diameter, bored through it. There was also a portion of an iron knife, apparently Anglo-Saxon, nine rusty nails and other pieces of iron; fifty-nine pieces of pottery of the same kind as previously found so abundantly in the upper 5 feet of soil removed; twelve chips of flint.

Hitherto the mound had consisted of roughly quarried chalk. At a depth of $9\frac{1}{2}$ feet from the top surface of the barrow Kimmeridge clay was found. On further examination it was found that the Kimmeridge clay now met with formed the exterior layer of an inner mound, the vertex of which did not correspond with the centre of the upper surface of the completed mound, but was somewhat to the north of it. The inner mound enclosed by it was 75 feet in diameter and 11 feet high. The thickness of this layer of clay was one foot, and no relicts of any kind were found in it.

Below the layer of Kimmeridge clay the soil of the mound consisted of small chalk-grit, which was found to extend as a concentric layer $4\frac{1}{2}$ feet thick over the core of the mound. In the lowest foot of this stratum, about the centre of the exploration (that is 14 feet from the top level of the barrow) were found seven cremated interments of burnt bones. The only relicts found with these cremated interments were portions of two bone pins, a piece of the lip of a food vase, and a flint implement chipped to a very sharp point.

Below the chalk grit layer, clayey soil of a hazel colour mixed with a little chalk grit was reached, and was found to form the core of the barrow, the other layers being arranged concentrically over it. This core was $5\frac{1}{2}$ feet high above the base level of the barrow and the surrounding ground. The cremated interments found in the chalk grit layer above were also abundant here, especially in the upper part of it; $3\frac{1}{2}$ feet from the top level of this clay soil a human mandible nearly complete, with the last molar tooth just appearing above its formative socket, was found. In exploring the core of the barrow it was worked from east to west. The first unburnt human remains found were those of a child (marked A) and 10 inches below it lay on the right side the skeleton B of a youth with the knees drawn up and the head to the east. A femur and tibia of this skeleton measured 13 and $10\frac{1}{2}$ inches respectively. The position in which it lay was $19\frac{1}{2}$ feet from the top of the barrow and 1 foot above its base level. No relicts were found with it, but about 2 feet to the south and 2 feet higher up in the mound was portion of a stag's horn, with the point broken off, and a similar specimen lay 1 foot higher and a little more to the south. In a shallow grave almost under the

Skeleton B was found a skeleton (marked C) lying on the left side with the head north north-east, both hands near the head, and the knees drawn up at a right angle to the trunk. A femur of this body measured 16½ inches and a tibia 13½ inches, both the right and left humerus measured 13 inches in length. A bone pin 9½ inches long lay about 3 inches behind the back of the body with the point directed to the hips. A little behind the shoulders lay a number of flint flakes, worked flints, and several tusks of boar. A similar deposit lay a few inches behind the hips. Altogether there were thirteen flakes and six worked flints of dark colour, two incisor teeth of beaver and twelve boars' tusks, one of which appears to have been made into an instrument. A little above the body were found a cervical vertebra of an ox and other pieces of animal bones. On the western edge of this shallow grave was the skeleton of a very tall person with the head to the west and over a large centre grave, to be described presently, into which it had settled about 10 inches. The skeleton was resting on its right side, the knees drawn upwards. In front of the face lay a beautiful knife of almost transparent glass-coloured flint, ground down on both sides, the ends being rounded; it measures 2½ inches in length and 1½ in breadth. Over the central grave and about 3 feet above the base level of the barrow lay the skeleton of a child marked E, and about 2 feet under it another skeleton marked F was found, lying on the left side, with the head to the south-west, the knees drawn up and the hands on the front of the face. Two feet lower down, in the central grave, about 1 foot below the surface level was the skeleton marked G, lying on the right side in flexed position, with the head to the north-east. The skeleton was distorted as it lay, probably by the unequal settling of the grave below. In front of the head lay a hammer-head made of the basal portion of a shed antler of red deer, and near it was a diamond shaped arrow head of dark flint with the point broken; there was also a beautiful axe of drab colored flint, such as might have been obtained from the neighbouring beds of chalk, 9½ inches long, lying with the broad cutting edge towards the knees of the skeleton. The hammer-head lay on its edge and evidently had been held in that position at the time of the interment by a shaft, probably of wood, which has perished. This skeleton was very probably originally over the mouth of the central grave but in the course of time settled down into it, like the skull of the skeleton marked D.

On working down into the grave about 3 feet below the surface level, the flexed skeleton of a child (marked H) was found lying on the right side with the head to the east. This

body lay at the bottom of a boat-shaped mass of clay in the centre of the grave with chalk grit round it.

Two feet lower down, that is 5 feet below the surface level of the barrow was an adult skeleton (marked I) in a flexed position, considerably distorted, with the head to the east. Near the feet of this skeleton lay the cranium (marked J).

At a depth of 9 feet below the base level of the barrow the firm, undisturbed floor of the grave was reached. In shape the grave was widest at the top and gradually narrowed towards the bottom, where it measured 7 feet across from east to west, and 5½ feet from north to south; at about half its depth, if measured 11 feet between east and west and 10 feet between north and south. Resting on the bottom of the grave was the skeleton marked K in a recumbent position, the head to the east, the knees drawn up, the right arm across the chest and the hand on the left shoulder, the left arm flexed to a right angle across the abdomen and the hand near the right elbow. At the knees of the skeleton lay the crushed remains of a semi-globular vase made of dark-coloured Kimmeridge clay such as may be obtained in the neighbourhood. Near the vase nine small flint flakes were found some of which were notched on one edge as if intended for saws; there were also two cores from which a few flakes had been struck, a good deal of decayed wood, and several thin patches of ferruginous matter.

A little to the south of the grave, in the inner core of the barrow there were thirteen more deposits of burnt bones, with one of which was found a bone pin. At a level of 3 feet above that of the base of the barrow and near the south edge of the central grave were found the distorted remains of a skeleton (marked L) which had been placed with the head to the south, the knees drawn up, the right arm crossed over the body, the left doubled up and the hand brought to the shoulder. This body seems to have been interred with the head and shoulders considerably raised. The mandible was found a little distance below the head and some of the bones were displaced. A small deposit of cremated bones lay close to the hips of the skeleton. About 16 feet to the south-east of the centre of the large grave and 1 foot above the base level of the barrow lay the skeleton (marked M) on its back, the head to the south-west, the knees and head pressed over to the north-west. Over this skeleton were the remains of two very small children much decayed, but the exact position in which they lay could not be made out. About 20 feet west of these and 3 feet above the base of the barrow was found, in the core of the mound, most of the bones of the limb of a fox, determined to be such by Mr. Newton, of the Museum of Geology, Jermyn Street.

The total number of cremated interments found was fifty-three. No relics of any kind were interred with any of them, except in three instances, where portions of burnt bone pins were found, and there was no trace of any cinerary urns having been used. None of the cremated deposits exceeded 16 inches in diameter.

A DESCRIPTION of the SKELETONS found in HOWE HILL BARROW.

By J. G. GARSON, M.D.,

Corresp. Mem. Anthrop. Soc., Paris and Berlin; Lecturer on Comparative Anatomy, Charing Cross Hospital.

THE specimens from Howe Hill Barrow which have been placed in my hands for examination by Mr. J. R. Mortimer, of Driffield, consist of the skulls belonging to the skeletons he has designated in his paper on the exploration of the barrow, by the letters C, D, F, G, H, I, J, K, L, and M, and some of the long bones of the extremities of D, I, and K. He has also been good enough to furnish me with the measurements of some of the long bones, which have unfortunately not been preserved, belonging to C, D, G, I, L, and M, together with his notes and diagrams relating to the exploration of the barrow, which have been of the greatest assistance to me. The skulls and bones are in a very fragile condition, and many of the former are very incomplete, notwithstanding that Mr. Mortimer has bestowed much time and patience in restoring them as far as was possible.

Eight of the specimens belonged to adult males, and two to children of about six and ten years of age respectively. No female's bones appear to have been found in the barrow. According to the usual rule, the description of the specimens I am about to give will only include the adults of the series.

Stature.—As is generally the case with human remains from ancient barrows, the stature of the persons whom the skeletons represent can only be determined by calculation from the long bones of the extremities. Of these I have personally only measured the right femur of D, the right and left femora and tibiae of I, and the two femora, the right humerus, and left tibia of K. The measurements of the other bones which I have given in the "Table of Measurements of the Long Bones" were made by Mr. Mortimer, on whose accuracy in measuring I must entirely rely. It is necessary to state that his measurements

were not made with instruments of such precision as were at my disposal for measuring those of the bones submitted to me, and although I have found some differences between his measurements and my own in the bones of D, I, and K, which we have both measured independently, I have little doubt that his measurements of the bones of the other skeletons which I have not measured, are sufficiently correct for comparison with measurements taken before such rigid accuracy as is now required was practised in anthropological research. The measurements made by Mr. Mortimer were supplied to me in inches and parts of inches, but for convenience I have carefully converted them into their equivalent in millimetres. By taking my own and Mr. Mortimer's measurements together I have been able to calculate the probable stature of seven of the adults, no long bones being found with the eighth adult skull (marked J). In doing this I have used the following formulæ given by Topinard in his "Éléments d'Anthropologie" :—

Femur + Tibia × 100;	Femur × 100;	Tibia × 100;	Humerus × 100;
49·4	27·1	23·3	20·7

As in my opinion the best and most reliable estimate of stature is obtained from the lengths of the femur and tibia added together, I attach most importance to the results yielded by the first of these formulæ. Having the measurements of both these bones in each of the seven skeletons, I have been able to estimate the stature in this way in each instance, and find that the average of the series is 1 m. 661, or 65·4 inches. Estimated from the length of the femur alone, the average is 11 mm. more, namely, 1 m. 672, or about 66 inches, while from the length of the tibia it is 1 m. 575, or about 62 inches. The tallest individual was that to whom the skeleton D belonged. His stature estimated from the femur and tibia is 1 m. 927, from the femur alone 1 m. 874, and from the tibia 1 m. 905, or 75·9, 73·8, and 75 inches respectively. It is fortunate that I am able to place before you the right femur of this skeleton and to demonstrate its length to you as 508 mm., otherwise you might think that there was some mistake regarding its measurement, on account of its being so unusually long. The two shortest skeletons are those marked C and L, each of which have an estimated stature from the femur and tibia of 1 m. 555, or 61·2 inches. From these figures it will be seen that there is a considerable degree of variation in this small series. The occurrence of D measuring 9 inches more than the tallest of the other six, without there being any skeleton correspondingly short, gives an erroneous idea of the average stature of the series. I have therefore had recourse to Mr. Galton's method

of arranging the different specimens according to their pentesimal grades, by which means we get rid of the disturbing effects of the extremes at each end of the series, and so obtain the true mean of the group. When treated in this way the actual mean stature of the series is 1 m. 628 (64·1 inches). For the information of those who are acquainted with this method of dealing with statistics I may state that at the 25th centesimal grade the stature is 1 m. 564 (61·6 inches), the 50th, 1 m. 616, and at the 75th 1 m. 692 (66·6 inches); the value of Q, therefore, is 64 mm., giving a corrected mean for the series of 1 m. 628. This height indicates as nearly as possible, I consider, the mean stature of the persons represented by the skeletons we have to deal with. It is considerably lower than the mean stature of the male population of this country at the present time, which, at prime of life between the ages of 23 and 51 is 1 m. 715 (67·5 inches), according to the extensive observations of the Anthropometric Committee of the British Association¹ (*see Reports for 1882*).

The tibio-femoral index, which shows the relative length of the tibia to that of the femur, varies from 77·7 in G and M to 87·4 in D, and averages in the whole series 81·1, but excluding D, in which the index is very high, it averages 80 in the six other skeletons, which is almost the same as that given by Broca, Topinard, and Hollet for Europeans. Although in persons of tall stature Topinard found that the index is somewhat higher than in short persons (averaging 81·1 in males with statures between 1 m. 70 and 2 m. 06, and 79·7 in those with statures varying from 1 m. 43 to 1 m. 60) the index is so high in D as to lead us to suspect that some error has occurred in recording the length of the tibia in that skeleton.

The index of Platycnemism, or the relation between the transverse breadth of the tibia to its antero-posterior diameter was ascertained only in the two specimens K and I which were measured by me; in the former it is 64·9 and in the latter 67·6, giving an average of 66·3 for the two specimens. The measurements for this index were taken by Busk's method about 4 cm. below the nutrient foramen of the bone. The average index in English people is 73, so that the specimens from Hawe Hill Barrow, are markedly platycnemic as compared with the existing inhabitants.

To trace the relations of the people represented by these skeletons it is necessary to study, as far as materials will permit, the characters and dimensions of those of the earlier races who have successively inhabited various parts of England.

¹ When these observations, as tabulated, are treated by Mr. Galton's method of centesimal grades, the corrected mean stature is 1 m. 703 (67 inches).

For this purpose I have calculated the stature of all the Barrow specimens of adult males described in the "Crania Britannica," by Dr. Barnard Davis. As, however, he only gives the dimensions of the femur, I have only been able to do so from it, and not from the femur and tibia, as I would have preferred to do. The results are as follows:—The average stature of eight Long Barrow skeletons is 1 m. 698 (66·8 inches), the average length of the femur being 460 mm., while that of twelve Round Barrow skeletons is 1 m. 793 (70·6 inches). Thus between the average stature, estimated from the femur, of the Howe Hill series, which I have previously stated, is 1 m. 672, and that of the Long Barrow specimens, the difference is only 26 mm.; while between the former and Round Barrow series it is 118 mm. It is therefore clear that the skeletons from Howe Hill correspond very closely to Dr. Barnard Davis's Long Barrow series, which, I may mention, includes specimens from Yorkshire, Staffordshire, Gloucestershire, and Wiltshire, from which counties also the Round Barrow specimens were likewise obtained. The tallest Long Barrow skeleton in the "Crania Britannica" series has an estimated stature of 1 m. 874, his femur being 508 mm. long, which is exactly the same length as the longest femur from Howe Hill; the shortest man has an estimated stature of 1 m. 546, which is also exactly the same as that of the shortest skeleton from Howe Hill. The range of variation in stature of both series is practically the same; in both there is a disturbing element owing to the presence of an unusually tall individual, which raises the average stature of each group to a figure higher than it should be. To get at the true mean stature of the groups I have again employed Mr. Galton's graphic method, which shows that the stature at the 25th and 75th centesimal grades is respectively 1 m. 585 and 1 m. 715 in the Howe Hill specimens, and 1 m. 652 and 1 m. 730 in the Long Barrow series, the respective values of Q (*i.e.*, half the difference between the statures at each of these two grades), are 65 and 39 mm., giving to the former series a corrected mean stature at the 50th grade of 1 m. 650, and the latter of 1 m. 691, the observed mean of the former being 1 m. 653, and of the latter 1 m. 702. On the other hand the tallest Round Barrow skeleton in the "Crania Britannica" has an estimated stature of 1 m. 920 (75·6 inches), and the shortest of 1 m. 686 (66·3 inches) while the rest of the series range themselves regularly between these extremes.

In the "Memoirs of the Anthropological Society of London," vol. iii, p. 41, Dr. Thurnam gives the length of the femur of twenty-five males from Long Barrows as 457 mm. which gives an estimated stature of 1 m. 686, while the femur in twenty-seven

males from Round Barrows averaged 477·5 which gives an average stature in them of 1 m. 761.

The Howe Hill specimens may also be compared with skeletons obtained by General Pitt Rivers from Rotherley, Woodcuts, and Winklebury. The medium stature of eleven skeletons found at Rotherley was 1 m. 562 (61·5 inches), and of seven from Woodcuts which were rather more mixed in type, 1 m. 644 (64·7 inches). The general conformation of the skulls obtained from these two places agrees with that of the Howe Hill series in being, as we shall afterwards see, markedly dolichocephalic. On the other hand the medium stature of twelve Anglo-Saxon skeletons from Winklebury was 1 m. 700. Thus we see that the stature of the Howe Hill Barrow series agrees very closely with that of the dolichocephalic race in the Pitt Rivers series, and is considerably less than that of the Anglo-Saxons in the same collection. The tibiae of the Rotherley specimens are somewhat platycnemic, the average index in these being 70·2.

SKULL—Characters of the Calvarial portion.—The ridges for muscular attachments on the cranial vault are of very moderate size, but in one or two instances are fairly well developed in the stephanic region. The under surface, however, presents a marked contrast to the upper in this respect, the superior curved line of the occiput being in some cases very strongly developed; a well marked torus is present in three specimens and a smaller one on a fourth, the other muscular attachments on the base are well marked except the mastoid processes which are only moderately large. The bones forming the calvarial vault are thick and heavy and in one instance might be called massive. The sutures are moderately closed in some specimens and obliterated in others; stenosis of the sagittal suture is present in a greater or less degree in the majority of cases. Where the sutures can be traced their character is simple. In only one instance are wormian bones present, these are of small size and situated in the lambdoidal suture. The antero-posterior outline or curve of the calvaria is regular; in one case the forehead is vertical, in several it is low, and in others its curve is medium. Occipital elongation occurs only once, and in that instance it is probably more apparent than real, owing to post-mortem distortion. I may mention here that post-mortem distortion of some kind is noticeable in almost all the specimens, but varies in character, sometimes affecting the right and sometimes the left side. When viewed from above, the outline of the calvaria is seen to vary considerably; in four cases it may be described as extremely long and narrow, the forehead rounded, narrow, and with the orbital processes little marked;

the sides straight and the occiput elongated; in three specimens it is somewhat shorter and broader, and more or less pear-shaped in form or, as it has been termed by some writers, "coffin-shaped." In one of these latter (L) the forehead is very rounded, the frontal bosses are well marked, and the occipital region terminates very abruptly, so as to give a truncated appearance to the back of the head. The fourth specimen (G) presents characters intermediate between these two kinds; it agrees with the first four in being long and narrow, but in the details of its outline it agrees with the second three. When the skulls are placed in a row and viewed from the front, the form of the arch of the cranial vault is observed to be very characteristic, being pointed in the first four specimens, while it is flat in the other four. These varieties in the form of the cranial arch is equally observable when the skulls are looked at from behind. As the differences mentioned seem to me to be no mere accidental variations but probably racial, I have divided the series into two groups, the first of which is composed of the specimens C, D, I, and K, while the second includes G, L, J, and M. It will be noted that the skull of the primary interment belongs to the first group. The immature specimens F and H belong to the second group.

On each parietal bone of J, just above the parietal boss, a rounded opening occurs, that on the left side being 35 mm., and that on the right 20 mm. in diameter, the edges are bevelled inwards, and from them stellate fracture rays extend. There is little doubt that these holes are the result of sharp and quick blows delivered with considerable force, and would have been sufficient to have caused the death of the person. The skull was found by itself without the rest of the skeleton in the middle of the grave below the centre of the barrow.

Characters of the facial portion.—The broken condition of the facial portion of the skull renders it impossible to give anything like a satisfactory description of the characters of the face, but it appears to be longer in proportion to its breadth in the first group than in the second. As a rule the facial bones harmonise with those of the calvaria, except in L, in which the weakness of the former presents a marked contrast to the massiveness of the latter.

The glabella and superciliary regions vary from being almost quite flat in some specimens to being moderately or even markedly developed in others. In the case where it is most developed (I), the superciliary bosses and the glabella form a continuous ridge across the forehead. The orbits appear to be set at about the same angle with the horizontal in each case, and their upper margins are thin; in form they are

broadened rectangular to nearly square in the specimens complete enough to admit of their shape being determined.

The nasal spine is small, the lower margins of the nasal openings are sharp and well-defined, the outline in profile of the nasal bones appears to vary within the outlines of Nos. 1, 2, and 3 of Broca's nasal curve. The profile of the upper jaw is straight or nearly so, there is therefore no tendency to prognathism. The direction of the incisor teeth is vertical. In the majority of cases the teeth are moderately worn, but in one case (I) they are much worn, and in two (K and J), they are little worn. The last molar is sometimes absent through not being developed. The form of the palate or rather the outline of the upper alveolar arch is somewhat parabolic. The chin is narrow and pointed in the majority of cases, but it is more rounded and less pointed in M.

Measurements.—Turning to the measurements of the skull and comparing them, as far as possible, with the characters observed by inspection, we find that while some of these do not vary much in the two groups, others are markedly different. The measurements of G show that in some respects it agrees with those of the first group, but in the majority it resembles those of the second, among which it has been placed from its general characters.

The cephalic index of the series ranges from 65·5 to 79·6; five of the crania are hyperdolichocephalic, one is dolichocephalic, and two are mesaticephalic. All of the specimens belonging to the first group, and G, belonging to the second group, are hyperdolichocephalic. The higher cephalic index in the other specimens is due not only to their breadth being greater, but also to their length being less than those of the first group. The cephalic index of L being considerably higher than the others (79·6) is probably due to irregular or premature closure of some of the sutures, which has caused abnormal bulging of the parietal regions, its biauricular or base breadth being only 100 mm., or no less than 20 mm. less than any of the other specimens, so that it cannot be considered quite normal.

The height measurement and the height to length index are slightly less in the first group than in the second. The appearance of greater height imparted to the eye in the former is therefore due to the want of filling out of their lateral walls, and the acuteness of the arch formed by the upper and curved parts of the parietal bones, as it will be seen that there is little variation in the biauricular diameter in the whole series, except in L, which is unusually narrow in this region. Only in K does the height exceed the maximum breadth. Owing to the

imperfect condition of the specimens it was not possible to measure the cranial capacity, but as estimated from the cephalic module of Schmidt it is a little larger in the second group than in the first, though the antero-posterior or sagittal, the horizontal, and the traverse circumferences of the cranium are practically similar in both groups.

The narrowness of the cranium in the first group is not confined to the maximum breadth only, but extends to the minimum, and the maximum (bistephanic) diameters of the frontal bone, and also to the external biorbital and bizygomatic diameters, all of which are less than in the second group. This shows that the upper part of the face is quite in harmony with the width of the calvaria in each group. The minimum traverse diameter of the maxillary bones, that is, the maximum alveolar breadth, is if anything less in the second group than in the first, while the bigonial diameter of the mandible averages 6 mm. less in the former, showing that the lower part of the face is narrower in them than in the latter, thus reversing the conditions present in the upper part of the cranium. This narrowing of the lower part of the face in the second group appears more accentuated on account of the greater breadth of the upper part, and gives a somewhat wedge-shaped appearance to the face. Details of the characters of the nose, orbits, &c., from the measurements is unfortunately impossible.

The skulls are in all respects similar to those of Long Barrow specimens which have passed through my hands from different parts of the kingdom, but I have never examined a series of skulls in which there were such a large proportion of hyperdolichocephalic specimens. The two types found in this series I have long been familiar with among Long Barrow skulls. That which I have distinguished as group 2 may be thought from the description to be somewhat like the skulls of the Round Barrow period, but this is not the case, as although somewhat coffin-shaped they are quite distinct from them. It is very unfortunate that in the exploration of this barrow the importance of preserving most carefully every bone of each skeleton found was not understood, as the anatomy of the two types which existed in that remote period has not been worked out yet. As far as I am able to see, there does not seem to be any difference in stature between the two groups, nor was there apparently any preference as to the place of interment given to the one type more than the other; both were thoroughly mixed together, some of each group were in the grave with the primary interment, and some of both kinds were found outside it.

Let us now turn to the skulls from Long Barrow described in the "Crania Britannica" and by Dr. Thurnam in the "Memoirs of

the Anthropological Society of London," vol. iii, and to the specimens figured by General Pitt Rivers from Rotherley and Woodcuts. The cephalic index of 17 Long Barrow skulls, including the nine specimens whose height has been estimated from the femur previously discussed, from the "Crania Britannica" series, varies from 67 to 75; three are hyperdolichocephalic, 13 dolichocephalic, and 1 mesaticephalic. The measurement of length from which Dr. Davis calculated the index was that from the ophryon to the occiput which generally is a little shorter than the maximum length measured from the glabella, as now universally done, consequently the cephalic index calculated from the former is somewhat higher, and it is probable that several of the 13 dolichocephalic specimens would have fallen within the limits of the first group had Dr. Davis measured their length from the glabella, many of them having indices according to him of 70, 71, and 72. In a more recent paper Dr. Thurnam¹ gives the cephalic index of 48 Long Barrow skulls as varying from 65 to 75. Of these 16 are hyperdolichocephalic, 29 dolichocephalic, and 3 mesaticephalic; their length averaged 195, the breadth 139 mm., the height 143, the face length (probably from the ophryon to the chin) 111 mm., face breadth 128 mm.; the cephalic index of the series averages 71 and the altitudinal index 73. Coming to the same race in post-Roman times we find that the cephalic index in the specimens from Rotherley varied from 68·9 to 82·6; and that 3 were hyperdolichocephalic, 6 dolichocephalic, 3 mesaticephalic, and 1 brachycephalic. The Woodcuts specimens are not so markedly dolichocephalic and not so pure in character.

Arranged in tabular form, the cephalic index in these series are as follows:—

	Hyperdolichoceph.	Dolichoceph.	Mesaticeph.	Brachyceph.
Howe Hill Barrow	5	1	2	0
Long Barrows "Cran. Brit."	3	13	1	0
Dr. Thurnam.	16	29	3	0
Rotherley, Gen. Pitt Rivers ..	3	6	3	1
Woodcuts	0	5	7	1

From this it is evident that the general form of the Howe Hill Round Barrow skulls agrees entirely with the Long Barrow skulls of Davis and Thurnam. In neither group of the Howe Hill barrow skulls, if we except L, which as I have already said is an abnormal specimen, have we any approach towards the brachycephalic type. The only other mesaticephalic specimen, J,

¹ "Memoirs Anthropol. Soc. Lond." vol. iii, p. 41.

is at the lowest end of the group, only .4 above the dolichocephalic group. As it is very imperfect in the posterior part of the base, and as it is shorter than any of the others, it is not unlikely that in drying, the unsupported part of the occipital may have curved inwards somewhat and so reduced the length. If this be the case, which I think is very probable, it would also fall into the dolichocephalic group.

I have not been able to compare these specimens from Howe Hill with any of the actual specimens described by Drs. Davis and Thurnam, but I have done so with drawings of them. On plate 33 of the "Crania Britannica" is an engraving and on the opposite page of the letter-press are some woodcuts of a skull which has a cephalic index of 68.0 from Long Lowe Barrow in Staffordshire, and on Plate 50 is an engraving of a skull from West Kennet Barrow in Wiltshire of which the cephalic index is 67.0; both of these specimens resemble the skull C from Howe Hill. Again on Plate 59 we have an engraving of a skull from the Long Barrow of Rodmarton, Gloucestershire, with a cephalic of 72 which agrees in its characters with M of our series. The skull depicted on Plate 5 from the Long Barrow of Ulley, Gloucestershire, fairly represents D, I, and K of our series. In the "Crania Britannica," therefore, we have specimens from the Long Barrows which represent very accurately both groups of our series from Howe Hill Barrow. I need scarcely occupy time in comparing them with the Round Barrow skulls described by Drs. Davis and Thurnam, as these are all brachycephalic and of very different type, except in cases where crossing or mixture has occurred.

Having established the fact, sufficiently clearly I hope, of the identity as regards the physical characters of the Howe Hill specimens with the Long Barrow race, there remains to be considered the question of the Archaeological evidence of their affinities. For this we have to refer to the abstract of Mr. Mortimer's notes which I made previously to examining the skeletons, so as to do away with the chance of any bias being produced on my mind by the specimens. In the outer layer of the barrow we find flint, bone, and iron implements; British, Roman, and Anglo-Saxon pottery, and some of more recent date; of animals remains those of dog, red deer, ox, and horse. There were well marked traces of this outer layer having been used for secondary interments, but neither these nor the various explorations which had been previously made had extended beyond this layer. Next there is a layer of Kimmeridge clay 1 foot in thickness in which no relicts were found, which as it were cemented in the interior mound containing the interments which may be considered as the *raison d'être* of the

barrow. This inner mound consisted of two layers in the outer of which were found 7 deposits of burnt bones, with flint and bone implements and piece of a food vase. In the inner or core of the barrow were numerous cremated deposits extending to half its thickness, but fewer in number below that. Towards the base line of the barrow and in the central grave we have the skeletons placed in different directions chiefly lying on one or other side with the limbs drawn up towards the body. With them were found flint implements carefully manufactured, worked flints, and flakes, bone pins, some of which were burnt. With K, the primary interment at the bottom of the grave, was a semi-globular vase of Kimmeridge clay, but no cinerary urns were anywhere found; the animal remains found in connection with the skeletons were those of fox (identified as such by Mr. Newton), ox, deer, boar, and beaver. It is a matter of regret that the pieces of bones from the cremated deposits, so numerous in the barrow, were not preserved, as it might have been possible to determine from them whether they were human or belonged to domestic or other animals. From these data I think we have undoubtedly to deal with the remains of a Neolithic people interred in an age before metal had been introduced among them. The bronze age which succeeded the stone period is to tally unrepresented in the barrow, from which I think we may conclude that a considerable interval of time elapsed between the primary interments in the inner mound and the secondary ones in the outer layer. Although the various flints and other articles found have not, as far as I am aware, been submitted to the examination of a well-known acknowledged expert, the full description which Mr. Mortimer has given us of them leads me to the conclusion that the Archaeological evidence corroborates the conclusions I have arrived at from my examination of the skeletons, and shows that the people interred in this Round Barrow are identical with the Long Barrow people.

In conclusion I should like to point out the advantage it would be if, when local explorations of ancient barrows are about to be undertaken, intimation thereof was given to the Council of this Institute in order that the matter might be referred to the Committee of Aid, of which General Pitt Rivers is Chairman, not for the purpose of taking the matter or credit out of the hands of local authorities, but for drawing their attention to the various points to be noted during the course of the work and giving them hints which would be valuable as to how the exploration could best be conducted. Had this been followed in the exploration of Howe Hill Barrow much valuable information would probably have been gained, which has

inadvertently been lost, and the money spent in the work would have been laid out to greater advantage.

NOTE.—Since this paper was written I have calculated the stature of the skeletons by Rollet's formulae for the *femur* and *tibia*, which have been prepared after very careful measurements of these bones in persons whose height was known prior to their skeletons having been disarticulated. The stature from the *humerus* is calculated from Topinard's latest formula for that bone.¹

	Humerus × 100.	Femur × 100.	Tibia × 100.	Fem. & Tib. × 100.	Average from H. P. & T.
	20.0	27.3	22.0	49.3	
C ..	1,650	1,556	1,539	1,558	1,588
D ..	—	1,861	2,018	1,931	—
E ..	—	1,609	1,577	1,594	—
K ..	1,710	1,707	1,700	1,703	1,706
G ..	—	1,677	1,618	1,651	—
L ..	—	1,535	1,586	1,558	—
M ..	1,625	1,677	1,618	1,651	1,640
	4,985	11,621	11,676	11,646	4,984
	1,662	1,627	1,610	1,619	1,643
Average excluding D.					
	1,662	1,627	1,610	1,619	

As the length of the tibia in D is quite out of proportion to that of the femur, and gives an excessive height to the individual by the above formula, I think that some error has occurred in recording its measurement. The above formulae appear to give better results than the earlier ones of Topinard used in the paper, as the estimates from the femur and tibia more closely correspond to one another. The earlier formulae are those used by General Pitt Rivers in his works on "Excavations in Cranborne Chase;" the formulae used in the paper for the estimate of stature from the lengths of the femur and tibia added together is almost the same as that just given, and the difference between using the one or other is only 3 mm. on the indicated stature, that is to say, when the divisor 49.4 is used the stature indicated by the answer is 3 mm. greater than when 49.2 is used as the divisor.

The length of the humerus in these specimens being greater proportionately than usual, is possibly to be accounted for from the longest bone having been measured instead of the mean

¹ Topinard, "L'Homme dans la Nature," 1891, p. 112.

of the right and left having been taken. Topinard's last formula has been given in this additional note in preference to that of Rollet's which would have given a still higher estimate, and therefore differed more from the results given by the other bones.

DISCUSSION.

The CHAIRMAN asked to be informed whether the dilapidated condition of the skulls was to be inferred to injuries caused by the pressure of a great superincumbent mass of about 30 feet depth upon them, or to injuries received during life; and whether the superficial cross-shaped excavations might not be due to some earlier exploration. He also offered some remarks on the evidence afforded by these discoveries in contradiction of the anciently-accepted maxim which associated long barrows with long skulls, and round barrows with round skulls, and on the circumstance of so large a number of interments by cremation being found without any cinerary urns.

Mr. T. V. HOLMES said that he would like to make a few remarks from a geological point of view. The barrow was situated on the Chalk Wolds, and the material composing it was almost entirely either chalk or the "clay-with-flints" common on the surface in a chalk district, the insoluble residue left on the dissolution of the chalk at the surface through the action of rain water. But, in addition, there was, between nine and ten feet from the surface of the barrow, a layer of one foot of Kimeridge clay. Now, this must have been brought from some distance—Kimeridge clay being a formation below the chalk—for some definite purpose; and he could only suppose that it had been placed where it appeared with the view of preserving the remains below from the destructive action of rain. The skulls, &c., exhibited, which were not enclosed in any kind of receptacle, probably owed much of their good condition to the presence of this Kimeridge clay, and it was a fortunate thing that the early explorers had not pierced through that stratum. He did not remember having read of anything similar in accounts of the exploration of barrows, and should be glad to know if Dr. Garson, or any other member present, had known or read of other cases resembling this.

Mr. A. L. LEWIS said the occurrence of soil brought from a distance was very frequent in burial mounds, and a covering of clay to keep the wet out was not altogether a new feature.

SKULLS FROM HOWE HILL BARROW, YORKSHIRE.

	Maximum Length.	Maximum breadth.	Basio-bregmatic height.	Minimum frontal breadth.	Septal-nasal breadth.	Prontal curve length.	Parietal curve length.	Ocipital curve length.	Antero-post. curve length (anterior to opisthotic).	Length of foramen magnum.	Total longitudinal circumference.	Horizontal circumference.	Auriculo-bregmatic curve length.	Bi-anterorbital breadth.	Nasal-mental length.	Nasal-alveolar length.	Buccal-cervical length.	External bi-orbital breadth.	Bifrontal breadth.	Maximum breadth of maxilla.	Bigostral breadth.	Interorbital breadth.	Orbital breadth.	Nasal length.	Nasal breadth.	Palato-maxillary depth.	Cephalic.	Height.	INDEX.									
C..	200	133	—	100	118	145	140	113	398	—	536	315	c110	125	70	—	—	—	104	124	88	60	104	—	—	56·4	103·37	46·9	95·2	—								
D..	202	139	132	87	c115	132	147	130	400	—	540	314	118	—	73	—	—	—	101	c128	102	60	100	—	—	60·3	96·8	46·9	95·2	—								
E..	194	132	—	94	c111	132	127	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—								
F..	198	131	136	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	86·8							
G..	205	142	140	106	122	133	145	123	401	—	553	311	120	125	75	—	—	—	114	132	61	98	—	—	—	—	—	—	—	—	—							
H..	186	140	—	100	c120	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—							
I..	191	152	140	103	125	143	146	114	394	—	549	341	100	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—								
J..	194	145	133	100	129	126	139	114	379	42	103	523	540	309	121	114	64	97	109	134	100	63	105	c23	40	23	52	24	34	74·7	68·6	47·8	117·5	46·2				
K..	200	133	—	100	118	145	140	113	398	—	536	315	c110	125	70	—	—	—	104	124	88	60	104	—	—	56·4	103·37	46·9	95·2	—								
L..	202	139	132	87	c115	132	147	130	400	—	540	314	118	—	73	—	—	—	101	c128	102	60	100	—	—	60·3	96·8	46·9	95·2	—								
M..	194	132	—	94	c111	132	127	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—							
N..	198	131	136	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—						
Total ..	794	536	207	281	345	409	413	243	1,178	41	114	526	2,107	1,231	405	340	143	—	205	252	190	180	207	23	26	38	60	48	107	268·5	50·4	166·8	93·2	181·1	86·8			
Average ..	198·5	133·7	133·5	93·7	115	136·3	138	121·5	383	41	114	526	527	310·2	116·2	115·2	71·5	—	102·5	126	95	60	103·3	23	23	38	63	24	53	68·0	68·0	68·0	68·0	68·0	68·0			
G..	205	142	140	106	122	133	145	123	401	—	553	311	120	125	75	—	—	—	114	132	61	98	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
J..	186	140	—	100	c120	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—						
L..	191	152	140	103	125	143	146	114	394	—	549	341	100	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—						
M..	194	145	133	100	129	126	139	114	379	42	103	523	540	309	121	114	64	97	109	134	100	63	105	c23	40	23	52	24	34	74·7	68·6	47·8	117·5	46·2				
Total ..	776	579	413	409	406	402	420	351	1,174	42	103	523	2,157	961	341	238	139	97	411	266	100	235	291	23	40	33	108	60	54	298·9	210·2	104·6	179·0	85·5	188·7	94·2	82·3	
Average ..	194	144·7	137·7	102·2	124	134	143	117	391	42	103	523	539	310	119·7	112	69·5	97	110·2	133	100	59	97	23	40	33	54	54	74·7	70·0	59·3	80·5	42·7	94·3	94·2	82·5		

means about and the measurements to which it is attached are approximate only, owing to the specimen being so imperfect as to prevent the exact dimension being

* Fronto-parietal curve 1.

When the musical length is the divisor.

[†] When the Bimarginal breadth is the division.

MEASUREMENTS OF THE LONG BONES, AND STATURE ESTIMATED FROM THEM BY FORMULÆ STATED IN PAGE

	Numerus.	Femur.	Tibia.	F. and T.	From numerus.	From femur.	From tibia.	From F. and T.	Average from F. T. and II.	Tibio-femoral Index.
2	330	425	343	768	1,594	1,598	1,472	1,555	1,545	80.7
D	—	*308	444	952	—	1,874	1,905	1,927	—	*87.4
K	—	*439	*347	*786	—	1,620	1,489	1,591	—	79.9
J	*342	*466	*374	*840	1,652	1,710	1,605	1,700	1,650	80.2
I	—	458	355	824	—	1,690	1,528	1,648	—	77.7
H	—	419	349	798	—	1,546	1,498	1,555	—	84.9
G	325	458	355	824	1,570	1,690	1,528	1,648	1,605	77.7
avg	—	3,173	2,569	5,742	4,816	11,707	11,625	11,624	4,800	5,676
	322	453	367	820	1,605	1,672	1,575	1,631	1,600	81.1

Means measured by myself: when only one bone has been measured it is marked r or f as it was right or

The relation which the length of the tibia bears to that of the femur shows that probably some error has occurred in measuring, or recording the measurements of the six specimens, omitting D, is 80.0.

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FEBRUARY 23RD, 1892.

F. W. RUDLER, Esq., Vice-President, in the Chair.

The Minutes of the last meeting were read and signed.

The election of DENNIS E. SAMUEL, Esq., of 3, Kensington Palace Gardens, was announced.

The following presents were announced, and thanks voted to the respective donors:—

FOR THE LIBRARY.

From the AUTHOR.—Mission Scientifique du Cap Horn. 1882-1883. Tom. vii, Anthropologie, Ethnographie. By P. Hydes and J. Deniker. 4to. Paris, 1891. pp. viii, 424. Illustrated.
 — The Chinese, their Present and Future: Medical, Political, and Social. By Robert Coltman, junr., M.D. 8vo. Philadelphia and London, 1891. pp. viii, 212. Plates.
 — A few Tusayan Pictographs. By J. Walter Fewkes. 8vo. 1891. pp. 18.
 — De Deficienti ad Idioti. By A. Zuccarelli. 8vo. Napoli, 1891. pp. 48.
 — Some Observations on the Havesu-Pai Indians. By R. W. Shufeldt, M.D. 8vo. Washington, 1891. pp. 4. Plates.
 — The Navajo Belt-Weaver. By R. W. Shufeldt, M.D. 8vo. Washington, 1891. pp. 3. Plate.

From the DELEGATES OF THE CLarendon PRESS.—A Primer of the Gothic Language. By Joseph Wright, Ph.D. 8vo. Oxford, 1892. pp. xii, 247.

— The Philology of the English Tongue. 5th Edition. By John Earle, M.A. 8vo. Oxford, 1892. pp. xvi, 744.

From the PUBLISHERS.—Chinese Characteristics. By Arthur H. Smith. 8vo. (Kegan, Paul, Trench, Trübner, and Co.) London, 1892. pp. ii, 428, ii.

— Evolution, Astronomy, Food, Physiology, &c. By William Durham, F.R.S.E. 8vo. (A. and C. Black.) London and Edinburgh, 1891. pp. 127, 133, 123.

— Egyptian Science. By W. E. Johnson, B.A. 8vo. (Griffith, Farran and Co.) London (1891). pp. xx, 198.

— Collections for a Lexicon in Luganda and English and English and Luganda. By the Rev. Philip O'Flaherty. 8vo. (S.P.C.K.) London, n.d. pp. (ii) 41.

From the SECRETARY OF STATE FOR THE COLONIES.—Annual Report on British New Guinea from July 1st, 1890, to June 30th, 1891. Fol. Brisbane, 1892. pp. 149. Plate and maps.

- From the ÉCOLE D'ANTHROPOLOGIE DE PARIS.—Revue Mensuelle, 1892. No. 2.
- From the EDITOR.—Nature. Nos. 1163, 1164.
— Revue Scientifique. Tom. xlix, Nos. 7, 8.
- From the NIEDERLAUSITZISCHE GESELLSCHAFT FÜR ANTHROPOLOGIE UND URGESCHICHTE.—Mittellungen. Band ii. Heft 3.
- From the ROYAL SOCIETY OF VICTORIA.—Proceedings. Vol. iii. Transactions. Vol. ii. Part I. Vol. iii. Part I.
- From the SOCIEDADE CARLOS RIBEIRO.—Revista de Ciencias Naturaes e Sociaes. Vol. ii. No. 7.
- From the SOCIEDADE DE GEOGRAPHIA DE LISBOA.—Boletim. 10a Serie. Nos. 1-3.
- From the SOCIÉTÉ IMPÉRIALE DES NATURALISTES DE MOSCOU.—Bulletin. 1891. Nos. 2 and 3.
- From the SOCIETY OF ARTS.—Journal. Nos. 2047, 2048.

Mr. H. LING ROTH read a paper on "The Superstitions, Burial, and other Customs of the Natives of Borneo. Part II. (Edited from the papers of the late H. BROOKE LOW.)"

Mr. F. W. RUDLER, Mr. A. L. LEWIS, and Mr. G. M. ATKINSON took part in the discussion.

The NATIVES of BORNEO. Edited from the Papers of the late BROOKE LOW, Esq., by H. LING ROTH.

II. LAND TENURE AND CULTIVATION; HABITATIONS; SLAVES; DRIES, PERSONAL ORNAMENT AND FASHIONABLE DEFORMITY; HUNTING; FISHING; NAVIGATION; WEAPONS AND WAR-DRESS; AGGRESSIVE WARFARE; DEFENSIVE WARFARE; HEADS; CAPTIVES; CANNIBALISM; MUSICAL INSTRUMENTS AND SINGING.

1.—*Land Tenure and Cultivation.*

As regards the tenure by which land is held, it has been the immemorial custom that when a person fells the virgin forest, he acquires by that act a perpetual title to the land. It is his from henceforth to do with as he pleases; he may sell it, or lend it, or let it. The rent he is empowered to demand may not exceed in value a dollar, and must be either a game-cock, or a sucking-pig, or a couple of plates. But as land is rising in value every year, and old jungle is becoming scarcer and scarcer, there is a

marked tendency among the tribes to demand a heavier rent—in fact several dollars a year. The tenure, too, has been modified within late years in view of the increasing demand for accommodation, and it is now generally understood that when the proprietor chooses to leave the district and remove into a distant country he forfeits, by so doing, all title to the ground and can no longer exact rent.

Agriculture with the Sea Dyaks is in a very backward condition, but they contrast very favourably with the Malay population in the vicinity. Neither use the plough nor buffalo, but the former cultivate on a more extensive scale and with a more provident idea. They grow, both individually and collectively, far more than they require for their own consumption, and with the residue they purchase necessaries, such as salt, steel, iron, and luxuries, such as personal ornaments, for their families. If the harvest has been really plentiful they are even able to afford to purchase gongs and toddy, and perhaps a jar or two.

As a rule they prefer to cultivate hilly soil, but some few have learnt to utilize the wet land. Their farming operations are regulated by the position in the heavens of the Seven Stars of the Pleiades. They commence business towards the end of the dry season, July and August, so that they have the wet monsoon to bring the paddy to maturity, and the beginning of the following fine weather, April and May, to ripen the grain.

The old jungle is called *kampong*, and the new is called *temuda*. The Dyaks prefer infinitely to farm the former whenever it is to be obtained within reasonable distance of the village, and when it is getting scarce in their immediate neighbourhood, they shift their residence nearer to it. In parts of the country more populous than others, it frequently happens that the Dyaks have not in their territory any old jungle; such situations are not so laborious to prepare, but being destitute of the rich layer of vegetable mould and the fertilizing properties of burnt wood, are not nearly so productive. After having felled the old jungle and farmed on it once, they leave it for seven years to grow up again and are then ready to use it a second time. The first year's growth is called *kruaoh*.

When it is intended to open out new country, the first thing to be done is for every family to select an eligible piece of forest land and to mark out the quantity they wish to cultivate. The next step is to *bebawang*, that is to say to consult the omen birds of the tribe to learn whether or no they approve of this choice. For this purpose they erect a hut first in one quarter then in another of the land in question, and wait upon the birds for

three days in succession until they hear either a note of warning to keep away from it, or a note of encouragement to remain on it. If the auguries are favourable they proceed to denude the land of its forest. Both sexes share in this labour; the women and boys clear away the undergrowth and the men fell the trees. Much valuable timber is then destroyed, as they spare only such fruit trees as are in full bearing, and those upon which the bees settle and from which they expect to be able to gather wild honey. As some of the trees are of enormous girth being furnished with buttresses, they do not always fell them at the base, but more often some distance up the trunk; others they leave standing altogether, merely lopping off the boughs to feed the fire which is afterwards to lay bare the ground and manure the soil.

When the land has been fully cleared it is left to dry. Sun and wind are now of almost vital consequence to the Dyaks, for if they are unable to thoroughly burn this immense mass of timber, famine stares them in the face for the year to come. If it pour with rain day after day and week after week, and there is no promise of continued fine weather, they are apt to imagine that some impurity has defiled the tribe and that the face of the Great Spirit is hid from them. So the elders of the people get to work to find it out, and adjudicate on all cases of incest and bigamy, and purify the earth with the blood of pigs. Prayers are offered to *Betara* from one end of the country to the other; for the space of three days the villages are tabooed, and all labour is discontinued; the inhabitants remain at home, and strangers are not admitted. But if the weather is warm and dry the farms are ready in a very few days for the burning. They are set on fire from the windward side when the breeze is blowing, and soon the entire mass is seething with flames. It is a magnificent spectacle to behold when several of these farms are ablaze at once, and the hills are flaring like volcanoes. The heat at this season caused by the universal burning is almost insupportable; for days not a glimpse is to be caught of the blue sky overhead; the smoke hangs over the country like a heavy cloud, and the sun glows through the fog like a globe of molten copper.

When the fire has exhausted itself and the ground is again cool, which it soon is from the frequency of rain in this country, they commence to sow the seed. The men traverse the farm with dibblers in their hands and dibble the ground; the women follow and drop in the paddy seed and cover up the holes by scamping earth into them with their feet. Indian corn (*Lingkau*) is planted sparingly at the same time; and as it is ripe and off the ground within three months from the date of the sowing, it does not

injure the paddy, amongst the rows of which it is sown; and as it comes in at a season when the rice with some is getting exhausted, and the second crop is not ready, it is of great use to the Dyaks, though not so much esteemed as rice as an article of food. On the larger collection of ashes they also sow the seeds of gourds (*gerrot*), pumpkins (*culekai*), a kind of melon without flavour (*janggat*, *kundu*), and cucumbers (*rampu*), of which they are very fond. These trail along the ground amongst the stems of the paddy, to which they appear to do no injury, and continue bearing for some time after the rice-crop has been gathered in. A small quantity of *pulut* is also grown by every family. It is a fine strong growing kind of paddy, but when cleaned and boiled is of a peculiar clammy nature. It bears a higher price than any other kind in the market, and is always eaten by the Dyaks cooked in green bamboos, as it is thought that the ordinary metal cooking pot spoils the flavour. The farm is tabued during the *tugal*.

After the seed has been sown, it is the business of the men to plant a fence (*raja*) round the farm to protect it from the inroads of wild animals such as pig and deer; this should not occupy much time, as the material is ready to hand, having been collected for the purpose previous to the burning, from the *débris* scattered on the ground.

There are many things which sorely try the patience of the Dyaks as they watch with unflagging interest the growth of their crops. It is true the pigs and deer are excluded by means of the wooden fence, but nothing short of the most untiring vigilance, and not always even that, can keep out the numerous climbing and winged pests, such as monkeys, squirrels, rats, and sparrows, some of which are sure to visit the farm as the paddy is ripening. Their sole remedy, such as it is, is to give a feast and propitiate the spirits in the usual manner. A miniature junk is built and filled with delicate morsels, the plagues are then besought to embark for some other country, and the toy is set adrift to float out to sea with the outward tide. During this ceremony the village is tabued for seven days in the same manner as is done when the purification for burning is performed.

The next thing is to build a *longbau* or farm house on some commanding or central situation where the family may reside without inconvenience off and on or altogether just as they please until the harvest is over. They have still weary duties to perform before they can hope to reap the fruit of their toil; but it too often happens that these are left to the women and children, while the able-bodied men seek other and more congenial occupation, i.e., either follow a war-path, or journey

into the far interior, or plunge into the jungle in quest of its produce.

As a rule the women have to do all the weeding (*muntan*) by themselves; this is a very laborious task, as the weeds grow so rapidly as to threaten to choke the paddy unless promptly removed. Another grievance is the grass, originally called *rumpat tebu*, but since nicknamed *rumpat blanda*, and which they declare was introduced by the whites to feed their cattle on. It is now a proverbial saying with them that it is impossible to get rid of this grass, likewise is it unprofitable to shake off the rule of the white man.

As the paddy begins to ripen, the men return to their homes and the families remove entirely to their farms, where there is plenty to do to scare away the birds and other pests and to prepare for the harvest. The paths intersecting the farm are closed at this season, and no one can traverse them without paying a penalty or sin-offering of a fowl and a bit of iron. Those who may be suffering from positive want, having exhausted their last year's stock, now glean of the half ripe paddy as much as they require for their immediate necessities; this is called *nambur*.

But when the paddy is fully ripe they all turn out, men and women, boys and girls, with knives and baskets and pluck the ripe ears with a few inches of stalk; these are then carried home and put out to dry, after which they are thrown into an enormous sieve suspended from the roof of the house, and threshed by the action of the feet, the grains falling through on to a mat placed underneath on purpose to receive them. After thorough drying in the sun, they are put in tubs made of bark (*tibang*) and stowed away in the loft or else housed in a hut, built on purpose for them hard by the village, the posts of which are furnished with wooden discs immediately below the flooring to prevent the rats from entering. The Dyak method of pounding the paddy to free it from the husk by means of pestle and mortar is injurious to the grain. By it the hard outer skin which protects it from the weevil is broken and this insect soon takes advantage of the circumstance to attack and destroy it. In the husk or paddy state the rice can be kept for years without injury.

The Punans and Kajamans farm meagrely; they prefer the sago to rice and grow the palm.

2. *Habitations.*

A Sea Dyak village is a terrace upon posts varying in length according to the number of houses of which it is composed, and

as the various houses are built according to a single scale and measurement and by a combination of labour, they rarely fail to present a uniform and regular appearance.¹

There is always a ladder at either end of the terrace by which to ascend and sometimes one or more towards the centre of the *tanju* or open air-platform. The roof is thatched throughout with the same material—shingles or palm leaves—if the latter the *ape* (*daua apong*) leaves are used where procurable, and where not (*dumabira*) the *pandanus*. The flooring in some villages is made of palm trees split into laths (*wibong* = wild varieties of the *areca*); in other cases of cane or bamboo or even twigs. The laths of split bamboo allow a delicious current of air to permeate the apartment. The outer walls are of plank, the inner of bark. No nails are used, the beams or rafters are lashed together with rattans or secured by wooden pegs. The posts are innumerable and of hard wood. The village is surrounded at its base by a wooden palisade which is itself protected by *cherante de frise* of pointed bamboo. The village is divided by a plank walling into two main portions, the front and the rear. The former partakes of the nature of a very wide verandah and is open throughout its entire length. The latter occupies the rear of the entire building and is sub-divided into apartments, one for each family. Between the plank wall and the edge of the *ruai* is the *tempuan* or footway, a narrow passage running through the centre so that a person may walk from one end of the village to the other without encountering any obstacles.

Every family thus possesses a compact little residence to themselves comprising a *bilieh* or room where they can enjoy privacy when they like, a *tempuan* or thoroughfare where they pound their rice and pile up their firewood, a *ruti* or verandah where they receive visitors, a *tanju* or open-air platform where they air their things and lounge in the cool of the evening, and a *urdan* or loft where they keep their tools and store their paddy.

The *bilieh* or private apartment is furnished with a swinging door which opens outwards and is closed by means of a heavy weight suspended to a thong to the inside. The door can be secured when required by means of a bar. If the room be unusually large, it may have two doors for the sake of convenience. Figures are sometimes carved or painted on the door—saurians among others, grotesque images of supernatural beings, and indecent caricatures of the human person. There is no window such as we understand, but a portion of the roof is so constructed that it can be raised a foot or two by means of a stick to let

¹ Kajah houses are packed close together and there are originally three in a row without any intermediate space. The door is only four feet from the ground, and any one can jump in.

out the smoke or to admit the fresh air. If the neighbours are near relations or intimate friends, as is often the case, a hole is cut in the wall which separates the room to avoid the necessity of a roundabout way into one another's apartments, and some villages are so arranged that one can traverse the entire length of the rear section of the building by means of these apertures without appearing on the verandah at all. There is no furniture in the room—none in fact being required. The floor is the occupiers' table and they squat to their meals. But there are plenty of mats to sit upon and baskets to pack their clothes in. Their cups and plates are hung in rows upon the walls as much for ornament as for use. Their valuables, such as old jars, gongs, etc., are ranged on three sides so as to present the most imposing appearance of wealth.

But the room is stuffy and untidy, and no wonder, seeing that there is but one for each family and this one is used as a kitchen as well as a mess room, as a nursery as well as a bed chamber. There can be no absolute privacy unless the door is barred to exclude the neighbours. Boys and girls keep running in and out and the dogs are always on the watch in the *tempuan* to spring in whenever the door swings open. The floor is swept after a fashion but the room is never deserted, and the roof is simply black with soot. The refuse is thrown into the piggery and poultry yard, which occupies the area or waste space under the house. Very little stench, if any, reaches the apartment from the ground, as the floor is raised too high above it to be affected by it. The *dapur* or fire-place is the only real piece of furniture in the room. It is built either to the right or to the left of the door set up against the wall of the *tempuan* and resembles an open cupboard, the lowest shelf resting upon the floor and the upper shelves being of lattice work instead of plank. The former is boarded all round and filled with clay. This is the fireplace and it is furnished with a few stones between which the pots are set. The shelf immediately above the fire is set apart for smoking fish and meat, etc. The shelves above this again are filled with firewood which being thoroughly dried is ready for use. The women, who do all the cooking, have also to keep these shelves supplied from the pile in the *tempuan*. As the smoke from the wood fire is not conducted to the roof by means of a chimney it spreads itself throughout the loft and blackens the beams and rafters until it finds its way out by the open window.¹

¹ Elsewhere B. L. says: "They make a *patas* or raised platform and under it light a fire and heap it with dry twigs and fill the platform with split wood for drying as *bekal* (firewood). From the fire they take brands for other fires. They drive three pegs into the ground and place *priau* (jar) on top. Ell

The *tempuan* or general thoroughfare is between the *bilich* and the *ruai*. It is three feet in width and is paved with wood. It is furnished with a ladder or notched stick by which to reach the loft, a family mortar where the women pound their paddy with wooden pestles to free it from the husk, and a pile or two of firewood reared by the men for use inside. This passage is also used by the women to winnow their rice in, feed their dogs, and attend to their chickens, and by the men to wash the dirt off their feet when they come home from their work. The wall of the *tempuan* is sometimes elaborately painted in various patterns, and the spears of the family are thrust into the skirting board so as to be handy.

The *ruai* or verandah is in front of the *tempuan* and is as nearly as possible the same size as the *bilich* from which it differs principally in being open on all sides and without any partition. It is therefore a cooler and more agreeable place and as such is frequented by both sexes for the purposes of conversation, discussion, and indoor pursuits. Female visitors are usually received in the *bilich*, but male visitors are invariably received in the *ruai* and only enter the *bilich* when invited to do so to be introduced to the women and to share the meals. They sleep in the *ruai* along with the boys and bachelors, and sit there all day when they have nothing better to do, conversing with the head of the family and chewing betel. The floor is carpeted with thick and heavy mats of cane interlaced with narrow strips of beaten bark. Over these are spread other mats of thinner and finer texture. There is a small fireplace between this and the next *ruai* for the men to warm themselves at when they get up, as they usually do, in the chill of the morning, before the sun has risen above the trees; the fire is allowed to go out in the middle of the day, but is revived towards the evening when it is getting dark, but still too early to light the torches.

Some *ruais* are provided with a *pangan* or bedstead with plank sides in one corner of the room for the men to sleep in, but this is not always the case. If the head of the family has made it for his own use and if he be a chief or rich man he will fix his gongs of various kinds around it for the sake of show; his weapons will be within reach and his war dress will hang from the roof where it can be seen to best advantage—a skull cap of wickerwork with its nodding plumes, and a skin jacket decorated with the tail feathers of the war bird of the tribe. But the most valuable ornament in the *ruai* by far is quarter with rice and fill up with water and when it simmers cover it with leaves. Before the arrival of Europeans the Dyaks used earthen prisons made by themselves."

of course the bunch of human heads which hangs over the fireplace like a bunch of fruit; these are the heads obtained on various warpaths by various members of the family, dead and living, and are handed down from father to son as the most precious heirlooms, more precious even than the ancient jars which they prize so highly. The next ornament of paramount importance is the bag of charms which is fastened to the centrepiece and which is in like manner handed down from generation to generation and about which there is a great to do if any of the charms are lost or stolen.¹ Other posts are often adorned with trophies of the chase, horns and such like of deer and wild cattle and the heads of animals such as bears, monkeys, and crocodiles killed by the young boys. The empty sheaths of the swords and knives of the family are suspended on wooden hooks, while the naked blades are placed in racks above their heads.

The *tarju* or open-air platform is in front of the *ruci* and is railed at the edge, but the rail is often so slight that it is unsafe to lean against it. The flooring is usually of ironwood the better to stand exposure to the weather. It is used as a lounge in the evening, the view from it being extensive and the breeze refreshing. While the sun is shining the paddy is put out to dry as are the clothes and a variety of other things. The family whetstone and dye vat are kept here under the eaves of the roof.

The *sudau* or loft is used to stow away the baskets and agricultural instruments during the season they are not in use. The paddy is stowed away here in tubs of bark and also the seed for next year's farm.² Young women often sleep here and so do the young men and boys who are unprovided with curtains when the mosquitoes and sandflies are troublesome down below. They burn a fragrant bark to keep off the mosquitoes.

Whenever it is deemed expedient by the Sea Dyaks to shift from one locality to another, or to abandon an old habitation in favour of a new one, a general meeting is convened to consider the proposition and the desirability of the measure is fully discussed.³ If a move be decided upon a few experienced men

¹ While on the Rejang river "a Kasewit gave me the task of a crocodile which devoured his sister, and showed me a bear's task which was lost to his family by an uncle who was killed by a Ukit and to recover which he a few years ago killed the Ukit. He showed me another task which was dropped by one of the bears which attacked and destroyed the house of an ancestor living at Jakut." Articles like these appear to constitute their charms.

² The Kyans, Kifahs, and Lamahans store their paddy in barns built for the purpose. The floor is six feet above the ground, and the posts are encircled with circular wooden discs to keep off the rats.

³ The Kifahs move away every few years so as to be always near heavy bush which they prefer for their farms.

are deputed to select a site and to report on its adaptability. If there be no reason to be dissatisfied with the choice, others are sent to hear whether the birds they venerate are for it or against it. Three days in succession they visit the spot and if the bird omens be favourable they proceed to work at once, and on the following morning the men turn out in a body with axes and choppers to hew down the jungle which is then left to dry. Another general meeting is thereupon convened to determine the question of the *tuah* or chieftainship, the measurement of the timbers, and the sequence of the rooms. It is customary to place the richest people in the centre of the village that they may exercise hospitality to all comers, and the boldest at either extremity so that they may defend the approaches if called upon to do so. The next move is to appoint an evening for the people to meet at the site of the new village. The ground is then cleared and measured out and pegs are put in where the posts are to stand. A piece of bamboo is then stuck in the ground, filled with water and the aperture covered with leaves, a spear and a shield are placed beside it, and the whole is surrounded by a rail. The rail is to protect the bamboo from being upset by wild animals and the weapons are to warn strangers not to touch it. If there is much evaporation by the morning the place is considered hot and unhealthy and is abandoned. Half-a-dozen people or so remain to keep watch and beat their tomtoms all night to frighten away evil spirits. Their friends return early in the morning and if all is well they set to and dig the holes, commencing with the chief's quarters and working simultaneously to left and right of him. Every family must kill a fowl or a pig before the holes can be dug, and the blood must be smeared on the feet and sprinkled on the posts to pacify *Pulang Gane* the tutelary deity of the earth. The posts must be planted firmly, for if one were to give way subsequently it would be regarded as a disastrous event and the house would be abandoned. All combine to labour collectively until the skeleton of the village is complete, and then every family turns its attention to its own apartments. When the building is sufficiently advanced to receive them they pack up their valuables and convey them by water if practicable, halting on the way until they obtain a favourable omen when they proceed rejoicing. Their valuables and cotton stuffs may not be moved into the house before themselves, they must be taken with them; this is required by custom. Before the village can be occupied a pig must be killed and its entrails examined and if the reading be unsatisfactory it is abandoned. After everything is settled a cup of *tuak* (toddy) is passed round.

When a family proposes to leave the village and remove else-

where it must give an *ensilas* (propitiatory gift ?) or be responsible for the consequences if a death ensue; a fowl, or a bit of iron, or a pig if the village be a large one is usually given.

When a person dies the floor of the room in which he died is changed.

In a Kifah village the smithy is in a central situation. The Kifahs smelt their own ore and manufacture their own iron ware. I watched the operation and procured a few samples of the metal. There is nothing peculiar to describe; there were an anvil, a couple of hammers, and a pair of twyers as usual, a charcoal furnace, a quantity of impure ore, and the usual primitive bellows. These people temper their own ore with a fragment of European ironware, when they can get it.

In front of a Lahanan village on the Rejang river there were four huge effigies, with the genital organs as usual fully developed; no indecency is intended, being merely relics of primitive worship [sic].

A fruit like an apple, called *bukh mandau* by the Dyaks, is used to destroy vermin.

3. Slaves.

Outdoor slaves become so either by descent, by purchase, or by an amelioration of condition from having been indoor slaves. Indoor slaves become so by purchase or descent. In cases where both parents have been outdoor slaves the *tabusan* (purchase or freedom money) is 40 reals (= \$28·80), or one picul of guns, unless the child is of tender years, when the *tabusan* is 80 catties (= \$21·60). In cases where one or both parents have been indoor slaves, but have become outdoor slaves at marriage, the children are outdoor slaves.

When one parent is an indoor slave and the other an outdoor slave, the children are divided between the owners of the parents, the first child following the condition of the father, supposing there be more than one child, e.g.: the father is indoor slave of A, and the mother is outdoor slave of B; a child is born and sex being immaterial to the question, it becomes half indoor slave of A and half outdoor slave of B. The *tabusan* of an indoor slave having been fixed by the practice of the courts at 60 reals (= \$43·20), and that of an outdoor slave by descent at 40 reals, it will be clear that the *tabusan* on account of this first child to A is in this case 30 reals, and to B 20 reals, should the parents decide on purchasing the freedom of their child, subject, however, if very young to reductions as above. But when two children are born, the first becomes indoor slave of A and the

second outdoor slave of B, the *tabusun* to A being 60 reals or 1½ piculs, and that to B 40 reals or 1 picul.

Where the parent is free on one side, and the other parent either an *in* or *outdoor* slave, the first child follows the fortunes of the father, the second that of the mother, and so on in succession, and this rule is unalterable. For example, a claim was lately made upon a boy, whose father was an *outdoor* slave, and whose mother was a free woman. The boy was third of a family of five and both parents were dead. The owner of the late father claimed this the third child, but the friends of the boy said that before the father died he had declared that the second child should be slave, and that the third child should be free, the second child being also dead. The court decided that the father had no right to alter the succession, and decided in favour of the plaintiff.² In cases where both parents are originally slaves, and after children are born one parent frees him or herself, the children born after the event follow the above rule.

In cases where an *indoor* slave, man or woman, has become an *outdoor* one upon marriage, and has sought his or her own living, the children, so far as he or she is concerned become *outdoor* slaves, but he or she is still liable to pay his or her full *tabusun* to the master, no reduction being made unless the slave has become aged.

The owners of *outdoor* slaves have a right to demand the services of one child to work as *indoor* slave until marriage, when he or she quits the master's house and returns to his or her position as an *outdoor* slave; if a girl the master is on no account to receive *barian* (purchase-money) from the husband, and if a boy the master must provide *barian*, or at least assist in the matter for the reason that the boy has hitherto worked for his master and has had no opportunity of acquiring property for himself. The above rule is seldom enforced by the owners. The owner of an *indoor* slave, if the slave be a man, is expected to provide *barian* when the slave marries, and in such a case he becomes co-heir in the slave's property at death; if the slave be a woman, the owner receives the *barian*, and is still co-heir in case of death. In this case the husband generally prefers to pay the *tabusun* and to make his wife free. In no case whatever may an *outdoor* slave become an *indoor* one except in the case of a child for a time as above.

It having come to the notice of the courts that in certain cases masters exacted as much work from an *outdoor* slave as from an

² Among the Punans the law seems a little different, the sex being of consequence; thus there was the case of a freeman who had married an *indoor* slave and a son and daughter were born. The son is free, following the condition of the father, the daughter is bond, following the condition of the mother.

indoor slave, and that in other cases outdoor slaves could not be induced to do any work at all, a rule was made by which outdoor slaves became liable to be called twice a year to work for their masters, twelve days on each occasion, failing which they would be subject to a month's hard labour on the roads. No outdoor slave is to be called upon to work out of his river's district.

The property of slaves is now strictly protected, it having been found that masters sometimes helped themselves as a right to their slaves' property. In a case lately settled at Oya, a widow-indoor slave of a *pangeran* (high Malay official), possessed three sago plantations, and complained that her master had felled six trees, he having no land of his own. The *pangeran* pleaded that he only did what was customary; it was held, however, that he was wrong, and he was ordered to pay \$9—the value of the trees and the costs of the suit.

The master of an indoor slave becomes as above-stated co-heir with the slave's other relations in case of death if he has provided *barian*; if not, his position on this point is as the master of an outdoor slave. The master of an outdoor slave may become co-heir only when the slave has no children. No master can refuse permission to his slave to free him or herself, or his or her children, whether indoor or outdoor, nor can he refuse permission to a slave to seek a new master, but he can complain to the courts if he has reason to think anyone has endeavoured to entice away his slave, and the person, if found guilty, would be heavily fined.

If a master seduces his slave she at once becomes free. There was a case in court where it was found that a master and his slave girl had lived as husband and wife for many years, and he had had children by her. The man died and his relations brought a case against the woman and her children to exclude them from the succession to the property of the deceased; but judgment was given in favour of the defendants on the ground that, though no marriage ceremony had ever been performed, the man and woman had been recognised by all their relations as husband and wife during the lifetime of the deceased.

The fine for bringing a slave into the country from foreign parts and selling him or her is \$100, and the slave is to become free. There was a case where a man brought a family slave into the country, whose *tabusun* was three piculs, and as no permission had been given to the man to bring him here the slave was allowed to seek another master who had to pay one picul only to the previous master. There was another case where a man was allowed to bring a family slave from Brunei, he having first asked permission, and the slave himself having been questioned

by me at Brunei as to whether he liked to come here, and permission being obtained at the same time from the authorities at Brunei.

Where it can be proved that a master has not supported an indoor slave, nor called upon him or her to work for five years, the slave is entitled to become free. The court would, however, be very careful about giving judgment in the case of outdoor slaves, they being very nearly independent. On one occasion one family brought a case into court against another and very numerous family, to compel the latter to pay the *tabusun* and become free, as the latter positively would not work when called upon, the defence being that they were already free, having been P. Dipa's slaves, who had been declared free. After a long investigation into their antecedents and genealogy, the case was given against the defendants, it having been found that since P. Dipa had left Maka none of the family had really worked for the plaintiffs, and that one of them had freed himself. An appeal was made to the then resident of the Third Division, but the previous judgment was confirmed, notwithstanding a letter from P. Dipa himself in favour of the defendants.

When indoor slaves contract debts, if such debts be trifling, amounting to only a few dollars, the masters are expected to pay; when the debt is considerable, should the master pay it, the amount is added to the *tabusun*, for which the slave is already responsible. Should the master be unable or unwilling to pay, the slave is assigned to work for him until the debt is paid off at the rate of \$2·50 a month. Slave debtors are unknown. When a freeman becomes hopelessly in debt, he is either imprisoned or assigned to his creditor to work off the debt as above, the creditor providing food and clothing; or the terms of his assignment may be that he sail in his creditor's *prahu* (boat) during the whole season—\$7·00 a voyage being allowed to and from Kuching, or \$12·00 a voyage to and from Singapore. During the close season the debtor must work in his creditor's house, and have such reductions made off his debt as may be agreed upon by the court. It has happened in a few cases that a relation has paid a man's debt and the man has been assigned to work for his relation until the debt is cleared off; no monthly diminution being allowed, but even in this case the term slave-debtors has not been used.

In the old days, according to the old Dyak laws, people who were careless enough to set a house on fire rendered themselves liable to become slaves to those who had been burnt out and this may have gone on for two or three generations, so that the grandchildren were slaves by birth. On one occasion the son of an old woman whilst smoke-drying some fish, fell asleep

through weariness. The fire caught the thatch and spread rapidly through the long Dyak house, melting the people's guns and cracking jars. A neighbour told the woman what had occurred, and she, forgetful of the altered state of things, at once gathered her children and said to them "Death is better than slavery," paddled with them to the Dyak graveyard, where she ate and gave the children to eat *tuba* root, and only one child survived to tell the story.

Every transfer of slaves must be made before the court.

For treatment of captives, &c. Warfare.

4. Dress, Personal Ornament, and Fashionable Deformity.

The ordinary male attire consists of a *sirat* or waistcloth, a *labong* or head-dress, and a *takai buriet* or seat mat; the full dress consists of the above with the addition of a *klambi* or jacket, and a *dangdong* or shawl.

The ornaments are *grunjong*, *langgu*, *tinggu*, *kongkong*, *rekong*, *simpai*, *tumpa*, *tinachien*, *ngkrinok* or *usus*.

The *sirat*, called *chausat* by the Malays, is a strip of cloth a yard wide, worn round the loins and in between the thighs so as to cover the *pudenda* and *perinacum*; it is generally six yards or so in length, but the younger men of the present generation use as much as twelve or fourteen yards (sometimes even more), which they twist and coil with great precision round and round their body until the waist and stomach are fully enveloped in its folds. It requires considerable practice to enable one to dispose of so much cloth gracefully about the person, but more time is spent by these young dandies of the forest than one would imagine, in order that they may appear to the best advantage; and the Ulu Ais seem to excel all other tribes in the skill and taste which they display in the disposal of this personal attire. One end is so arranged as to fall over the coils in front and dangle between the legs; the other is hitched up behind so as to hang at the back like a long tail, or is looped up at the hip to droop on the right thigh. The former plan is adopted where no *takai buriet* is worn so as to cover the hind-quarters as much as possible. A practised eye can tell in a moment to what tribe or section of a tribe an individual belongs, not merely by the length of his waistcloth and the way in which it is wound on, but also by its colour and the fashion in which it is decorated at its extremities. White, as being the plainest and most unpretending, is worn in mourning and during outdoor labour; it is cheap and will wash. Dark blue, however, is the commonest throughout the country when out of mourning; it wears better, shows the dirt less, and is singularly becoming.

Both kinds are sometimes bordered at the edges with scarlet flannel. Prints and shawl patterns are affected by the young men of the Ulu Ai and Ngkari tribe; crimson, and saffron, and orange by the young of the Lamanaks and Sakarang tribes. A *klapong sirat*, or tail flap is often worn by the elder men of the latter tribes; it is of a dull white colour with a fringe to it, being made of home-grown cotton; it is prettily and fancifully embroidered with coloured thread and is sewn on to either end of the *sirat* to hang before and behind. The younger men and boys prefer the fringes, *kabu sirat*, manufactured by the Malays, or ornamental borders of coloured flannel.

The *labong*, or head-dress, is a piece of cloth a yard or two in length and wound round the head in the style of a turban, but so disposed that one end stands up straight from the forehead. But there are various ways of wearing, binding, coiling, &c., whereby one tribe may be distinguished from another. A white *labong* is frequently the sign of mourning. Saffron and orange are favourite colours among the Lamanaks and Ngkaris; black prevails among the Saribas settled in Kajulan. The Ulu Ais affect shawl patterns and *buntas*, and the Sakarangs of Gutabai use Javanese handkerchiefs edged with scarlet and yellow.

By others, young as well as old, a kind of cap called *selapok* is much worn. It is made of plaited rush or cane, sometimes coloured and sometimes plain, as well as coarse or fine; and is shaped either to fit closely to the skull or to resemble an ordinary square cap. Fillets or head-bands of the same material and variable quality are also worn with an open crown and bordered with scarlet cloth. Helmets of wickerwork are in vogue on the warpath and will be noticed in their place.

The Kiñahs wear bark cloth round their caps (as we wear crape round our hats) to show they are in mourning.

The *takai buriet* is a small mat which is tied round the waist with strings so as to cover the hind quarters and furnish the wearer with a clean portable seat at all times, and at all seasons. The mat is of split cane and woven into an endless variety of patterns and decorated in a variety of ways, use being made of coloured flannel, massar shells, and European pearl buttons for this purpose. Sometimes a bear's skin or a panther's skin is cut to the required size and worn in lieu of a cane one, and when this is set off with the requisite beadwork of the country it forms a most handsome ornament to the person.

The *klambi*, or jacket (*baju*, in Malay) is manufactured from yarn spun from their own cotton. There are several kinds of these, but the one known as the *klambi burong* is considered the best. In all of them the sleeves are open in the armpit, and the pieces sewn together with twine. The edges are bordered

with scarlet cloth. There is another kind much worn by the Sakarangs which resembles a waistcoat more than a jacket, being without sleeves. The Ulu Ais manufacture a coarse white jacket striped with blue. The *klambi subang* manufactured by the Saribas is of finer and closer texture than any other, and is in consequence far more expensive. The thread of which it is wrought is procured from the Malays, and is of a red colour. The lower portion of the back is embroidered with gold and silver thread with a fringe of silk depending from it.

The *dandong* or shawl is worn slung over one shoulder.

The ornaments worn in the ear are various, some in the lobe and others in the outer cartilage. The former are called *langgu* and the latter *grunjong*. The *langgu* of the Ulu Ai is borrowed from the Punan, and consists of a small but heavy coil of brass or copper. The Lamanaks wear larger but lighter ones of lead. Boys sometimes wear a narrow strip of scarlet as a pendant to the ear or a wing of the golden green *chrysochroa* (? *buprestis*) beetle, so highly valued in India.

The *grunjong* is worn in the rim of the ear, which is pierced along its entire length to receive the numerous rings of which it is composed, and it looks uncommonly pretty on the person; but when it is discontinued for a time as it often is from choice or by necessity, as in mourning for instance, and the holes are plugged with wooden pegs to keep them open, the cartilage looks hideously ugly and disfigured by slits. The rings are of brass, and smallest at the top gradually increasing in size until they reach the bottom. A very great many are worn in each ear by the young and vain, while elderly men are content with fewer. The variety worn by the Ulu Ai and Ngkari are strung with white cowries, which are kept in their place by a ruby bead at either end of the line, and are heavier by far than the plain brass *grunjongs* used by the Sakarangs.

The *tinggu* is a pendant worn at each ear to droop on to the shoulder and is only worn by over-dressed dandies. It is decidedly ornamental, being made of thin crescent-shaped plates of brass stamped and fringed with metal.

A *simpai lengau* is an armlet, or as it is literally translated, a loop for the arm. It is worn above the elbow joint and is often of dark wood or carved ivory, but the kind most generally in use is formed from the base of the cone of the *kima* shell (*conus guratensis*), and is grooved on its upper surface. The cavity is filled up with resinous substance, and studded with the scarlet seed of the *michelia* or with a few *nassar* shells. It is a most becoming ornament but extremely expensive—

a pair of the largest and best, costing £6. Occasionally two are worn on each arm, but this is considered bad taste and is discouraged.

The *tumpa* or bracelets worn alike by men and women are of three descriptions, and are called *tumpa gelang*, *tumpa bala*, and *tumpa unus* respectively. The first are of brass, the second of ivory and the last of plaited fibre. The two first consist of some sixty close-fitting rings commencing at the wrist and reaching half way up the arm; a few in the former are made to hang loose on the back of the hand and being engraved are styled *tengkelai*.

The *tumpa bala* or *tumpa godieng* as they are also called, have been adopted by the Sea Dyaks within the last few years from the Tetaks and Segaus; they are now made in china and gold in Bornean Bazaars.

The *tumpa unus* are only worn by young people too poor to afford any other kind; they are merely rings of plaited gomuti palm fibre worn in heavy masses on the wrist.

Kongkong rekong signifies "collar for the throat." Necklaces of European beads are worn by the young of both sexes; the ends are furnished with tassels of minute beads or bats' fangs. They are worn loose round the throat, and button in front, the tassels resting on the chest. Lamanak lads are fond of a large gold button as well as the tassel, but this is not universal even among their own tribe. Frequently several necklaces are worn, especially by the women. These necklaces of beads seem to have superseded the more savage necklaces of human teeth, etc., which were the fashion a generation ago, and is one proof of the civilising influence of the European government.

The *tiuchian tunjok* are the rings worn on the fingers by both sexes. They are commonly made of brass, variously but rudely engraved, and are not soldered at the ends; other metals also are used but less frequently, such as copper, lead, tin. Gold and silver rings are procured from the Malays and used only by the tribes living in close proximity to them. Shell rings are less uncommon.

The *ngkrimoks* are hoops of cane worn immediately below the knee-joint, and covered with an infinity of diminutive brass rings. The hoops some eight or ten in number are strung together with coloured rattan to preserve a compact and regular appearance. The *ngkrimoks* are worn almost exclusively by tribes of Sakarang and Lamanak origin; the Uin Ais and Ngkaris use the *unus* instead, and this consists of innumerable rings of plaited fibre worn in heavy masses, as many as 300 at a time upon each leg. The palm from which

the fibre leg rings is made, is called *apieng* by the Dyaks and *limak* by the Kyans.

The female attire is very simple, consisting of a *bidang* or short petticoat when at home, and a *klambi* or jacket when out of doors. By way of ornament the women wear in addition to the finger rings, necklaces, and bracelets which have already been described, other ornaments peculiar to their sex, styled *balong*, *tusok penchieng*, *tina*, *rangki*, *lumiet* or *tinchein*, *selong* and *gelang ghirieng*, all of which are described in due order.

The *bidang* is a short petticoat reaching from the waist to the knee, and is kept in its place by being folded over in front and tucked in on one side. It is manufactured from their own cotton fabric, which is first partially dyed and then worked into a variety of patterns to which the most fanciful names are given. The *bidang* worn in mourning is stained a deep indigo blue, and is called *kain baloi*. A lighter shade is worn out of mourning especially by the Ulu Ais, and is often adorned by them with small cowries or pearl buttons, and fringed with *grunongs* or little tinkling bells.

The *klambi* or jacket worn by the women is if anything larger than that worn by the men. The patterns are precisely the same but the texture is finer. The Saribas women wear besides a jacket dyed a ruddy brown with mangrove bark, with a square embroidery on the back, and a fringe of hawks' bells.

The *balong* is a chaplet of odoriferous berries worn by marriageable girls.

The *tusok penchieng* is a thin plate of embossed metal which is soldered to a small tube passing through a hole in the lobe of the ear; this tube is filled with a nut which screws into it, and keeps the tube from falling out.

The *tina* are slender hoops of crimsoned cane worn round the waist, and look like whalebone when coloured black, as they invariably are in mourning costume.

Rangki are the shell armlets already described under the name of *simpai tengan*. They are only worn upon especial occasions, and form part of the full dress of a woman of fashion. As they are far smaller in size, and not so well finished, they are less costly than those worn by the men. Some eight or nine however are worn upon each arm, the more the better in their opinion.

The *lumiet* is the *rawai* of the Malohs (Malangs) and is a much esteemed body ornament of the Sakaranga. It is composed of a series of cane hoops covered with an infinity of diminutive brass links. A few of the hoops are made larger

than the rest so as to hang loose on the hips. The series that encase the waist and the stomach fit close and are pinned together with brass wire; they are sometimes worn up to the nipples, but not every woman can afford to be at such great expense.

The *tinachien* is the body ornament of the Ulu Ai and Ngkari women. It is composed of some eight or ten parallel rows of large brass rings long enough to encircle the waist. They are strung on rattans and connected with one another by a network of cane inside. The ends of the band are furnished with a pair of vertical plates of the same metal, the outer edges of which are curled, the one inwardly, and the other outwardly, so as to catch one another, and effectively lock in the body. The rings (with the exception of every alternate one, which is an ordinary finger-ring), are long and broad, and rudely engraved a variety of patterns. These rings cost eight shillings a string, and a complete set of ten would cost five pounds.

The *selong* are dense coils of thick brass wire many fathoms in length, and of enormous weight, worn on the leg from the ankle joint to the thigh; they are not worn every day, as may readily be conceived.

The *gelang ghirieng* bracelet is not described.

Love of finery is inherent in the young of both sexes; the elderly are less fond of it and often dress very shabbily and save up their good clothes for their offspring.

The women sit with their legs straight out in front, and their petticoats tucked in between their thighs so as to expose nothing, but they expose their breasts.

The Sakarang girls are very fond of using an oil made from the *katiok* fruit, which has the scent of almonds; all their clothes are made from native cloth of native yarn, spun from cotton grown in the country. The inner bark of a tree called *ipoh* by the Dyaks and *tajam* by the Kyans, and which appears to be identical with the Upas tree of Java (*Antiaris toxicaria*), is used for clothing, and the young tree is grown for this purpose in Dyak gardens; the bark is not pulled off until a year after the tree has been felled.

Hair dressing.—The women make no attempt to part their hair but push it over the forehead and gather it into a knot at the back of the head—a plain or fancy one as the occasion may warrant. They use no oil of their own manufacture, but all who are able to afford the luxury may obtain it from the Malays. The hair is not so long as it might be, and is frequently cut short during dangerous illness. The circumstances of their lives are not favourable to a luxuriant growth. They have in common with the men their full share of exposure to

all weathers, together with hard work out of doors as well as in doors. Flowers are worn in the hair as ornaments—red and green being the favourite colours.

The men dress their hair in a variety of ways. The genuine Ulu Ai fashion is to let the back hair grow long and flowing, and to keep the front either shaved or close cropped. The Ngkasi style is to shave in front and to keep the back hair close cropped, to shave again across the back of the head but to leave two parallel rows of hair and a tiny lock beneath them in the centre. The Kyan method of dressing the hair is, however, fast becoming the fashion among the dandies of all the tribes, e.g., to permit the back hair to flow to its full length over the shoulders and to grow the front hair over the forehead long enough to form a Grecian fringe. When it is inconvenient to have the back hair streaming over the shoulders, they twist it and tuck it carefully into the turban.

Depilation.—The prejudice in favour of a smooth face is so strong that in the whole course of my experience I have never met with a single bearded or moustached Sen-Dyak, although it cannot but be manifest to a close observer that were they only so disposed they could produce a thicker crop than the Malay. This is evident especially in the case of old men and chronic invalids who by reason of age or infirmity have ceased to care much about their personal appearance and whose chins are rough in consequence with a bristly growth. The universal absence of hair upon the face, on the chest, and under the armpits would lead the superficial observer to infer that this is owing entirely to a natural deficiency, whereas it is due in great measure to systematic depilation. *Chunam*, or quick lime, is frequently rubbed into the skin so as to destroy the vitality of the follicles. The looking glass and tweezers are never out of the hands of the natives, and they devote every spare moment to the conscientious plucking out of stray hairs. It is likewise the fashion for both sexes to shave the eyebrows and pluck out the eyelashes. The growth upon the pubes in both sexes is often copious enough—some few Loweas object to even this, and either crop it close or remove it altogether. Female Dynks eradicate the hair off the *labia pudenda*. I know a Malali at Kanowit who is bearded from ear to ear, and when he shaves, which is every now and then, his chin and cheeks are quite blue; he was a Mentuari of unmixed blood.

The Undups regard it as provocative of headache to throw their refuse hair into the fire or into the water. It may be cast on the ground or tossed to the winds; it is still better to bury it in the earth.

Tatning prevails to a small extent among the Sea-Dyaks, but it is by no means universal among them. It is besides a custom of very recent introduction but is steadily gaining ground, though as yet it is confined to the male sex. I have seen a few women with small patterns on their breasts, but they were exceptions to the rule and were not regarded with favour. The marks or patterns are found more commonly on the arms, shoulders, and thighs; occasionally also on the forehead, throat-apple, chest, and ulna. The patterns are small, of a bright blue tint, and supposed to improve the appearance of the men. They have no other use or signification whatever being neither distinctive of race, family, rank, nor of individual. The pigment employed is a solution of soot (dammar-soot), which is rubbed into the skin after it has been punctured. Tatuing has not yet acquired the dignity of a profession. Few Dyaks are really able to puncture with skill, although many of them can trace designs; but as their own designs are poor imperfect imitations of the Kyans, they disfigure the skin rather than adorn it. They say they are able to eradicate the pattern by puncturing it over again with the acrid sap of a forest tree. The designs employed are not numerous although four are in common use. The practice is simple but requires practice like most things. The design is first carved on wood in relief; it is then smeared with the sooty preparation and printed on the skin. The figure is then punctured in outline with a set of needles dipped in the ink (for such it is), and afterwards filled up in detail. More ink is poured on to the skin and allowed to dry into it. Rice is smeared over the inflamed surface to keep it cool; if this is not done, it is apt to gather and fester. The limb operated upon must be kept free from wet, and must not be scratched however much it may itch. The operator of course requires to be remunerated, but as he is not a professional he is satisfied with a moderate guerdon.

Among the Lugats there was a certain Aman Jerin who was partially but beautifully tatued in patterns of a bright blue tint.

Painting.—The men never paint their bodies, but the women after bathing often colour themselves from the waist upwards with turmeric to render themselves yellow and attractive. The result is far from agreeable to the eye of an European, but for this they care little so long as their efforts to please are appreciated by the men of their own race, which appears to be the case.

Scars.—The men do not make any use of raised cicatrices to ornament the body, but they are proud of scars nevertheless

and especially if they are regular and symmetrical. They are particularly proud of their vaccination marks if they show out well, and are equidistant apart. The women often prove the courage and endurance of the youngsters by placing a lighted ball of tinder on the arm, and letting it burn into the skin. The marks thus produced run along the forearm from the waist in a straight line, and are much valued by the young men as so many proofs of their power of endurance.

Ear-holes.—The rim of the ear is perforated from top to bottom with sometimes as many as twenty holes to support the ear-rings commonly used by the men. The lobe of the ear is also pierced and enlarged to receive a pendant. These organs present a hideous appearance when the ornaments are laid aside, as they reveal in all their deformity the slits and sores, while to add to their uncomeliness the holes are plugged with bits of wood to keep them open. These ear-rings, especially the heavy shell ones, oblige a man to lie flat on his back when he is going to sleep, it being painful to rest on the sides of the face.

Kyans and others wear tiger cat teeth in the tips of their ears. The points of Dians (a native on the Rejang river) I observed turned upwards, which is not usual, and he said it was an old custom revived by a chief named Hang. The Uma Lesongs wear two such teeth in each ear, the upper one pointing upwards, the lower one downwards; those who are unable to procure the genuine article wear imitation ones carved out of horn or bone.

Teeth filing and staining.—The upper incisors of both sexes are often filed into a single sharp point; a hole is bored through the centre of each and filled with brass. The enamel is scraped off with a rough stone, and the teeth are rubbed with leaves which stain them black. The lower incisors are ground down to half their natural size and blackened in the same fashion, but are neither pointed nor studded with metal. Caries is rare, and the natives seldom suffer from tooth-ache. The teeth are naturally beautifully white and regular, but it is the fashion to disfigure them in this manner as they approach the ages of puberty—boys do it when they begin to care to please the women. They dislike white teeth and consider them hideous. I once saw a Sakarang wearing over his natural teeth a thin brass plate (*lios*) cut to resemble a row of pointed teeth; this was worn over the upper incisors and hooked into the molars. I believe the boy picked up the notion from the Mentuaris or Malohs (Malaus), but I do not imagine it is common with his tribe as I never saw another with it either before or after.

Circumcision.—Circumcision is practised but it is not

universal or obligatory, and is only performed upon males. In the female the clitoris is said to be amputated.

The spritsail yard in the penis.—The *palang* is a smooth bar of bone or metal, the size and length of the bar of an ordinary watch-guard, with the ends rounded off. It is not generally so elaborate as the *utang* (perforation of penis) used by the Kyan chiefs, but it is equally effective and gratifying to the female. The *palang* is not, however, a Dyak institution; it originated with the Kyans, but it is fast becoming popular with at least a portion of the rising generation. It is nevertheless a pernicious practice, and ruinous to the male organ, even if the operation be skilfully performed; it is therefore to be hoped that the young fellows will discover their mistake before it is too late and refuse point blank to pander to the vitiated propensities of the looser behaved females. These latter encourage the practice for their own selfish purposes by every artifice in their power. The truth appears to be that no woman once habituated to its use will ever dream of permitting her bedfellow to discontinue the practice of wearing it. The Dyaks are satisfied with one, the Kyans, especially the chiefs, with sometimes as many as three at a time. The operation is a painful one for any man to submit to, and if the hole be not driven clear of the urethra the consequences are apt to be serious in the extreme. The member is first immersed in cold water and when numb to all sensation, the glans is compressed sideways between a pair of perforated bamboos, and a pointed brass peg is driven through it with a single blow, but in such a manner as to pass above the urinary canal. The *palang* is then introduced as the peg is slowly drawn out.

The *palang unus*, as it is called, is also used by the Dyaks. It is a ring, or collar, of plaited palm fibre, furnished with a pair of stiffish horns of the same wiry material. It is worn on the neck of the glans and fits tight to the skin so as not to slip off. The idea is in all probability borrowed from the Malays.

5. Hunting.

Hunting with dogs.—Hunting is with the Sea-Dyaks an occasional pursuit rather than a steady occupation or a necessity of existence. They subsist more upon a vegetable than an animal diet, and they fish far more than they hunt. They only form hunting parties once or twice a year, when the entire village is about to celebrate some periodical festival, and it becomes an imperative duty to provide an abundance as well as a variety of food for the guests. Other tribes devote more time to the chase

and less to the soil. The hunter usually proceeds on foot, accompanied by his dogs, which run on ahead and beat up the game, while he dawdles about gathering things on the way that may be useful to him. He knows when his beaters are on the scent by their peculiar clamorous bark, and he hurries up to spear the animal they have brought to bay. A Dyak village swarms with dogs, but few of them are fit for the labours of the chase, being for the most part curs that whine and howl and are of no use whatever, except to consume the refuse food and prowl about the premises. They are small in size and of a tawny colour. The breed is known to the scientific world by the specific name of *cassis rutilans*. Some are striped with black, others are plain; they are called *sah* or *sabit*, according as they are one or the other. The former are the fiercer looking of the two. The best of them, that is to say, those employed in the chase, are plucky little animals and will worry a boar three or four times their size and not give in until cruelly mauled. Such dogs are worth their weight in dollars to those who are fond of boar and venison, and invaluable to those tribes who, like the Batakans, depend upon the hunting path for their food.

The quarry is carried on the back in a pack-basket suspended from the shoulders, and is cut up at home. If it is too heavy or too bulky to be transported in this fashion it is either cut up on the spot or dragged by the leg along the ground to the nearest watercourse and conveyed home in a canoe. The Dyaks infinitely prefer pork to venison, the former being the richer, fatter, and juicier of the two; indeed the venison of the country is coarse and devoid of fat. There is no waste in the preparation of animal food. The horns and tusks come in for a variety of uses, ornamental, superstitious, and economical. The larger bones are preserved to be hereafter fashioned into knife handles. The smaller bones are chopped up with the meat and fat to be afterwards salted or smoked as choice may dictate. All pickled food, *makasam*, is esteemed, and especially so pickled pork; pickled venison and pickled fish are devoured with immense satisfaction.

The Kinhahs preserve the skulls and jaws of the animals killed by their dogs in the chase, and of such as they offer in sacrifice; but they abandon them when they abandon the village, for it is not permitted by custom to take them away from one place to another.

Spring bows.—As the woods are full of pig and deer, the Dyaks resort to various contrivances to secure these denizens of the forest. Spring bows are set and pitfalls are dug in likely places for them to run against and tumble into. The *peti*, as

the spring bow is called, consists of a single bamboo lance attached to an elastic stem. This lance is laid in a horizontal direction above the ground about the height of the animal it is intended to transfix. A sapling bent for the purpose forms the spring by being held back; a string crosses the path, the least touch of which loosens the spring and forces the bamboo in a straight line across the path and consequently through the animal that may happen to be passing.

The *nkubang*, or pitfall, is another common contrivance to impale game. The bottom of the pit is staked with bamboo or iron-wood spikes, and the opening is covered with twigs and leaves so as to be in no way distinguishable from the surrounding vegetation.

Deer snaring.—The *jarieng* is also in use among the Dyaks, the idea being borrowed from their neighbours the Malays. The object is to drive the deer into the meshes of a net and to kill them before they can break through. This sport requires nerve and a quick eye to avoid ugly wounds from the hoofs and antlers. The *jarieng*, as this net is called, is simply a long cane cable with a continuous series of cane loops or nooses depending from it, and standing five feet high; if a single cable be insufficient, two or more are joined together until the required length is attained. A bend of the river is selected where the deer are known to lie hid. The net is then stretched across the narrow neck of land, and upheld in an upright position so as to intercept the stampede into the bush. The party then divides, some to watch the net, others to drive the deer towards it. This they do simultaneously from both sides of the point, yelling and shouting with all their might and barking like dogs to rouse the game. The startled deer spring from their coverts, and bounding towards the forest encounter the net and get entangled in its meshes. Before they have time to extricate themselves they are despatched by the watchers. This sport can be followed in the night time as well as in the day time provided there be moonlight.

Springs.—The smaller kind of game such as porcupine, pheasant, partridge, jungle fowl, &c., are caught in springs, and by these alone a clever woodman can supply daily his family with this kind of food in abundance. The cord made use of for their springs is of their own manufacture, very fine and strong, and made from the inner bark of several kinds of trees. They have also *cage traps*, into which the squirrel and mouse deer are attracted by choice food, and which fall upon and detain them. Pigeons and other birds are caught with springs and *birdlime* placed in the trees which they frequent for food, particularly the different species of *Kasmu aru* (*ficus*)

which are very abundant and on which the many species of these birds delight to feed.

The *sumpitan*.—Great accuracy is shown in the way in which this tube is drilled out of a hardwood shaft some seven or eight feet long. Among the Punans it is common to destroy wild boar, deer, &c., with the darts.

Pig sticking.—Once a year, when the falling fruit is thickening upon the ground and the pigs have cleaned out one side of the river, they instinctively take to the water and endeavour to reach the opposite bank. The natives know when to expect this wholesale movement on their part, and as the time draws near they form parties to waylay the pigs at various points. They wait patiently for days together, and are rewarded ultimately by spying a herd issue from the forest and plunge into the stream, following their leader in a dense compact mass. When they are well in the current the canoes dash into their midst, sticking them right and left, making enormous bags. As the swine have been feeding upon fruit for some time past they are fatter than usual and their meat is better flavoured.

Crocodile hunting.—From superstitions motives the Dyaks do not interfere with the crocodile until it has developed a man-eating propensity. They then turn out in a body and make war upon the race and slaughter it wholesale. They take the heads and hang them up over the fireplace side by side with the cluster of human heads which depends from the roof. When the Dyaks of Pulo Pisang lost one of their number a few years ago they made a war path and killed sixteen crocodiles in revenge, and when Avan Nyipa, of Batu Gadiang, lost his wife, the Kyans and Sebops turned out en masse and destroyed thirty within a month. They probe the bottoms of the pools and other likely places with long poles and compel them to rise to the surface and despatch them with their spears. The Undups believe, or affect to believe, that the crocodiles are partial to their tribe, and they are therefore reluctant to slay them. They say that once upon a time when the king of the crocodiles fell ill and was sick unto death an Undup medicine man was fetched to cure him, and received as his reward a distinct promise of immunity from ravage for himself and his tribe for evermore, notwithstanding which, however, an Undup woman was afterwards seized, but the monster let her go when she screamed out. She was rescued by her friends, who declared that the brute mistook her at first for a Sakarang, but let her go when her voice proclaimed her to be an Undup.

The ordinary way to take a crocodile is with a baited wooden hook and slack cable. The most irresistible bait is the carcase of a dead monkey (dog or fowl will do), and the more over-

powering the stench the greater is the probability of a bite, as the brute will only swallow putrefying flesh. Fresh meat is carried away between the jaws and hidden in some safe place until it decomposes. The line is a loose one of rattan, many yards in length, and is not made fast, so that the reptile may drag it away with him when he bolts the bait. The buoy at the other end of the line floats on the water and serves as a clue to his whereabouts; and when he is discovered he is hauled ashore and pinioned. While this is being done he is addressed in eulogistic language and beguiled, so to speak, into offering no resistance; but the moment his arms and legs are bound across his back and he is powerless for evil, they howl at him and deride him for his credulity. They then rip up his belly for human remains and hew him to pieces. He struggles furiously at this stage but to no purpose, and is speedily decapitated with an axe. A short stick pointed at both ends is often used instead of a hook, and is secured to the bait in such a fashion that it is swallowed lengthwise. To ensure this result the bait is hung upon a bough overhanging the river, but several feet above the level of the water to oblige the crocodile to spring upwards in order to reach it. The efforts he makes to disgorge the wood work it round so as to stick in his throat crosswise. It is usual to hang a dog higher up in the same tree so that he may attract the cruising reptile by his unhallowed howling.

The Sarawak crocodiles vary in length from ten to twenty-six feet, but the common size is from ten to fifteen feet. They become a public nuisance from the date of their first human meal, and are thereupon hunted to death. Manang Blitang, of Yong, is perhaps the most successful and persistent crocodile trapper in the Rajang River. He is supposed to possess supernatural power over them, and his services are therefore always in request where a seizure has occurred, and the kinsfolk are anxious to discover the whereabouts of the guilty reptile.

The porcupines and monkeys are hunted for their bezow stones,¹ the squirrels for their fur and their teeth (squirrels' teeth are used for necklace tassels); bears and tiger-cats and panthers are hunted for their canine teeth, their skins being used for war-jackets and seat mats; the hornbills, jungle fowl, and argus pheasants for their plumes for decorating helmets and sword sheaths; the bill of the rhinoceros hornbill is wanted for ear pendants and helmet crests, and crocodile teeth are wanted for ointment cases; bears' teeth and boars' tusks are wanted for charms, and the crimson horn of the *buceros rhinoceros* is used

¹ Calculi formed in their stomachs, much valued as amulets.

for ear pendants ; the helmet of the *galeatus* is used for a sword-buckle.

6. Fishing.

The Dyaks are expert anglers, and fishing is with them a favourite occupation. They commence fishing at a very early age, and the habit grows upon them rather than otherwise. They are fond of the water and both swim and dive well. They swim hand over hand like dogs. They never take a header in diving but jump into the water upright, sinking feet first.

Diving for Fish.—They often catch the fish in the upper waters by diving into the rocky pools and pulling them out of the holes and crevices. The *sema* especially are caught in this way.

Curing.—The women cure the fish. They either dry it in the smoke of a wood fire, or cut it up and boil it in brine and so preserve and pickle it, making *makasam ikam*.

Scoop net.—The scoop net is used chiefly by the women who are fond of wading up the shallows, net in hand and basket *mitong*, slung from the shoulder, scooping up the prawns and periwinkles, &c., that come in their way. Sometimes they drop the fish into a hollow gourd which they carry.

Casting net.—The *jala* or casting net in ordinary use is made of *tengang* string dyed claret colour, with *samat* to preserve it, and is weighted with stones if nothing better is to be obtained.

Angling.—They fully understand the use of a bait and invariably bait their hooks. Fish lines are made of the *apieng* palm.

The *Fish-spears* in use are the *penawan* and *serampang*; the *penawan* is simply a barbed spear with a slender iron fore-shaft; the *serampang* is a forked spear furnished with a long bamboo shaft, and with either two or three metal prongs.

The *Fish-traps* in every-day use are the *bulu* and *abau*. They are both of stiff basket work and resemble an acorn in shape; the only difference between them is that of size; the latter being infinitely the larger. The traps are made of the ribs of the *apieng* palm.

Fishing by torchlight.—Another mode of fishing is to creep along the bank in a canoe after dark with a torch in one hand and a fish spear in the other, to stick the mudfish as they rise to the surface confused by the light. Prawns are also caught in this fashion but with a hand-net.

Tubai fishing.—But the favourite form of fishing whether on a large or on a small scale is with the *tubai* root (*menispermum*) the juice of which is baled into the stream to poison its waters and to cause the fish to rise stupefied to the surface. The *empang*, or basket work screens, are first erected at the mouth of the river to prevent the escape of the fish into pure water. Each person brings his own *tubai*—a bundle or two. A *karan-gan* is selected where suitable stones abound. It must be two or three hours' pull from the entrance or the sport would be over too soon. The canoes line either bank, and at a given signal the entire *bala*, i.e., party, commence to hammer out the root and soak it in the water in the bottom of their boats. A few minutes later when all hands are ready the poisoned liquid is baled out into the stream, and the canoes after a short pause begin to drift slowly down the current, and as the fish rise to the surface, they are speared with fish-fork or captured with hand-nets. The best of the fun is over in an hour or two, but many remain, nevertheless, until late in the evening to watch for a fresh rise. The women join in the sport and scoop up the small fry with their nets. It is forbidden by custom to hurl the spear at the fish; any accident arising from an infraction of this rule is punishable by fine.

7. Navigation.

The canoes are hollowed out of a single log by means of fire and the use of the adze. The natives have no measure to ensure accuracy, but are entirely guided by the eye. Generally the canoe shows traces of the fire and water treatment it has received, the inner surface being soft and full of superficial cracks, while the outer surface is hard and close. When the shell has been sufficiently opened out, thwarts are inserted to prevent its shrinking as the wood dries. Planks or gunwales are stitched on to the sides to increase its volume, the seams being caulked with sago stems which are light and porous, and swell when wet and so keep out the water. Each of these side pieces is formed of an entire plank about 12 inches deep and about 1½ inches thick, laced on to the body of the canoe by flaxen cords and united to its opposite plank by the thwarts. The largest canoes have the sides made still higher by means of a narrow plank laced on to the first gunwale, and the seam again caulked. The canoe is alike at both ends, the stem and stern being both pointed, curved, and rising out of the water. There is no keel, and the canoe draws little water. There are no ribs nor is there any figure head.

To make a bark canoe the native simply goes to the nearest

stringy bark tree, chops a circle round it at its base, and another circle 7 or 8 feet from the ground ; he then makes a longitudinal cut on each side, and strips off as much bark as is required. The ends are sewn up carefully and daubed up with clay, the sides being kept in position by cross-pieces. The steering is performed with one or two greatly developed fixed paddles.

8. Weapons and War-dress.

The *slighi* is a wooden lance, the point of which is hardened in the fire. It is used as a missile and is hurled at the enemy. It is usually of ironwood (*bilian*), but palmwood javelin, especially *isbery* is also used. They are showered upon the enemy at the commencement of an engagement before the parties are close enough to use the spear, which never, or rarely leaves the hand.

Dart stems are made of the palm called *apicng*. The poisonous juice of *tasam* tree is used for their darts ; it is dried over the fire until it becomes a hard paste, and is then softened with the juice of an *akar*, creeper.

The *sangkoh* is a long wooden shaft with a steel spear head. The shaft is usually of ironwood, with a spud of bone at its butt end. If it has no spud it is pointed so that it can be stuck into the ground. It is always held towards the point, rather than by the centre, and over the right shoulder, the butt end up in the air, and the point towards the ground. The blade is of steel, and is 12 inches in length, and broad towards the point ; the tang is not inserted in a slit in the wood, but is bound on to the stern with cane or brass wire, and is very firm. The spear is used at close quarters to thrust with, and is held in the right hand—the shield occupying the left. The shaft is occasionally carved, but more often plain. I have one in my collection with six or seven brass rings, indicating the number of warpaths made by its owner.

The *dukn*, or *parang pedang*, is the scimitar so much worn by the Malays, and differs only from it in being thicker and heavier. It is formed after the pattern of a German cavalry sabre, and has a cross-handle of brass. The blade is two-edged at the point, so that it can be used for thrusting as well as cutting. The sheath is of some light wood, and is stained crimson with dragon's blood. The Undeys and Balaus in particular have their sheaths covered with silver work, and the hilt with silver. The hollow of the hilt is decorated with human hair, and the edge of the sheath is adorned with a row of the wing feathers of the hornbill. The Malays wear the sword with the edge upwards but the Dyaks wear it with the edge outwards.

The *parang nabur* seems to be the only really genuine Dyak weapon. The *parang pedang* they have copied from the Malays, and the *parang ilang* is altogether a Kyan weapon, and beyond their powers of imitation. The *nabur* in ordinary use is a short curved sword with a bone handle. This style of sword is broadest at its points of curvature. It does not curve like a scimitar from the hilt, but is straight for some distance, and takes a sudden curve towards the end, and when the sword is long, as is one in my collection, it becomes top heavy and requires both hands to wield it effectually.

The *parang ilang* is the Kyan *malab* (*mandau* elsewhere), and is preferred to any other side arm by Malays as well as Dyaks. It is the ambition of every Dyak lad to be presented with one of these.

The Uma Bawangs are famous for their *parangs*, which they make out of their own iron ore.

The war costume consists of a basket-work hat called a *katapu* and a skin-jacket called a *gagong*; in lieu of the latter the *klambi taish* (?) a quilted jacket is used. These form but poor defensive armour for the body; reliance is placed upon the shield.

The *katapu* or helmet in general use is a round skull cap of wicker work, with a rush lining and occasionally a skin covering, surmounted by either a metal plate or two of fanciful pattern or the scaly armour of the *tenggolieng*. The crown is decorated with the plumage of birds and the sides with tufts of human hair. The rim is bordered with scarlet flannel and embroidered with nassur shells.

The Kyans and Kiñahs wear on their headpieces the tail plumes of the helmeted hornbill—each plume signifying a dead enemy.

The *gagong* or war-jacket is a skin with a hole and slit in the neck of it to admit of the insertion of the warrior's head, the animal's face falling on his stomach, and its back hanging over his shoulders and reaching below the waist. This dress is by no means universal among the Dyaks, as suitable skins are not so easy to obtain. Goat skins are preferred by them to any other, being long haired at the shoulder, and black is preferred to white; bear skins and panther skins are also in use but more sparingly. The animal's face is usually covered with a metal plate, or a mother-of-pearl shell, to protect the pit of the stomach, and the back is decorated with bunches of hornbill feathers. The *gagong* is worn more for its warlike appearance than for any real protection it affords the wearer. It may possibly divert a wooden javelin, but it is no defence against the thrust of a spear. The Kiñahs wear the mandibles of the

Bucerotidae (hornbills) in pairs on the breast of their war-jackets of skin to record the number of persons they have killed with their own hands—one pair for each person killed.

The *klambi triah* is the *boju tilam* of the Malays, and is a padded or quilted cotton jacket, for the most part sleeveless and collarless. The striped variety is the one most in request. It is thick enough to be able to protect the body from the blow of a wooden javelin, but is useless against a spear.

The *trabai kit klan*, or shield, is with its handle hollowed out of a single block of wood. Its form is oblong and convex with a ridge along its centre. It is held in the left hand well advanced before the body, and is not meant to receive the spear point but to divert the spear by a twist of the hand. It is often coloured with red ochre or painted some elaborate design or fantastic pattern. It is large enough for its purpose, but it is small compared with the shields manufactured by the Sibus and others. There are also seen in use among them wicker-work shields of plaited bamboo, corresponding to the wooden ones in length and size.

9. Aggressive Warfare.

Dyak warfare is far from despicable, although it is undisciplined, and when the command is assumed by a person of sufficient influence to enforce obedience, the force at his disposal becomes more formidable than it otherwise would be; but this is not so often the case now as it used formerly to be. In fighting, the warriors cluster round their chiefs and are indifferent to the fate of the others so long as the chiefs escape with life and limb. Similarly relatives cluster together, preferring to entrust their lives to the tender mercies of one another, rather than to a stranger; a relative would bestride his fallen kinsman and protect his body from mutilation, when a stranger might decline the combat and leave him to his fate. They carry away the dead and wounded when possible; the former they bury, but, if hurried, often so imperfectly that the enemy scent them out, dig them up and carry away the heads. When unable to carry away the dead, they have sometimes severed the head from the trunk and carried it away with them to bury in the forest, rather than let the treasure fall into the hands of the enemy.

It is customary to announce a coming war expedition for such and such a season at one of the great feasts, when the village is thronged with guests from the country far and near, and when there is sure to be an unusual gathering of powerful chiefs. The speaker, who must be a great chief, gives his reason, that

his people wish to put off mourning, or that his people have been slain and he must have some revenge, and he ends by inviting all present to accompany him on an incursion upon an ancient enemy. If he be a chief of any real influence he is sure to secure an ample following in reality more than enough for his purposes, but his ambition expands as his numbers increase and his warpath assumes grander proportions. The women lend their assistance to induce their husbands and lovers to join the warpath. Before this, however, the chief whose mind is set on the business gets together a circle of chiefs and warriors, which before the end of the proceedings resolves itself into a council of war. The expediency of the campaign and the exigencies which demand it are then openly debated, and if the majority or even a strong party are in favour of it, the chief who originally broached the topic, if he feels confident of a following large enough to effect his purpose, announces his intention of becoming a leader and the date of the departure for the enemy's country. All present are invited to accompany him and to bring their friends and relations. The details are then discussed, the amount of *bekals* (baskets) necessary, the route, the character and number of enemy, etc. The period usually selected for any expedition on a large scale is that immediately after the seed planting or after the harvest; the former time is preferred when available as they can spare the time better, and have three months clear before they are required to gather in the harvest. In the latter case they would probably have no farms at all for that year, as they would have no dry weather to dry the clearings, which, therefore, would not burn well.

As the time draws near for the expedition to start, a spear is sent round the country from village to village with a *tembulu tol*, to signify how many days are to elapse before the commander-in-chief is able to make a start; a place is also mentioned where he will await the force. The women are everywhere busy preparing the *bekals*, and the produce of the gardens are taken to the nearest market to exchange for tobacco, *chunca*, *ganbir*, etc. The men on their part have been busy in getting the war boats ready, launching them into the river, lashing on the planks and fitting them up with palm leaf awnings and bamboo floorings. Those who are able to purchase the material, plane the bottom of their canoes to make them smooth and tar them to preserve them, make figure heads for the bows, and paint the side planks in various patterns. They take nets with them to fish by the way, and dogs to hunt with if the distance is so great that they are likely to run short of food, but their chief support on an expedition of this kind is what they find on the banks and in the forest—especially the

wild sago. The men are very busy furbishing up their arms and sharpening their weapons and decorating their helmets and war-jackets. [As long as the men are away their fires are lighted on the stones or small fireplaces just as if they were at home. The mats are spread and the fires kept up till late in the evening and lighted again before dawn, so that the men may not be cold. The roofing of the house is opened before dawn, so that the men may not lie too long and so fall into the hands of the enemy.]

The chief is always the first to leave the village, and as the first and chief part of the journey is by water, he pulls away in his canoe, and at some convenient distance from the village, he bivouacs for the night to *beburong*—to consult the omen birds. If the omens by birds are favourable, he proceeds to the tryst and there awaits the force as it dribbles in one by one or few by few. When all or most have arrived the flotilla moves on uncontrolled until it reaches the *pengkalan* or landing-place, whence the overland route commences. There is no attempt at order or regulation as long as they are in the water and in their own country, every boat stopping and moving much as it pleases, but all trying, nevertheless, to reach the *pengkalan* at once. If this is close by there is a dash for it, but if it is several days' journey there is a good deal of loitering by the way to increase their stock of provisions or to equip themselves more fully with *kejengs* (deer), poles, *tukahs* (pegs), etc. and cords for hauling rapids. The chief brings his musical instruments with him and plays on his gongs and *lauwahs* as he sweeps along. The line of march is most irregular, the canoes not moving up in a line but with wide gaps, some outstripping each other, others lagging behind to cook and angle, others deterred by bad omens and adverse dreams obliged to halt for the day, others to dry their things capsized in the rapids, etc.

It is a grand sight to see these canoes filled with dusky warriors whose naked arms and bodies are just visible beneath the awning, pulling away with a uniform and vigorous stroke, each arm with its white shell bracelet, and the chief standing up in the stern steering the rudder with hand and foot. The canoes hold each from twenty to seventy men.

Arrived at the landing-place, a camp¹ is formed, but the huts are not arranged in any military fashion, but line the banks of the river. The *langkan*, or hut, is built sometimes to accom-

¹ Kuyas, when they make their camp, strew dead leaves outside the fence so that no one, not even a dog, can approach without being heard. Pungsus make their camp in a circle, each hut facing a different direction, so as to prevent a surprise.

modate a whole boat's crew ; the warriors lie side by side, their spears are stuck in front, and their shields and swords in their hands, so that they can spring to their feet, arms in their hands, in the twinkling of an eye. The roof slants upwards from the ground and forms an angle with it. It is thatched with leaves and branches ; the flooring is of the same material with a layer of bamboo or sticks. A fire is lit hard by to keep off the mosquitoes and sandflies, who are often troublesome. These huts are meant to last a single night, or several, according to the care with which they have been built ; but stronger huts are reared when a stay is expected to exceed a few days. Here a halt is made of several days' duration to explore the neighbourhood, and to permit stragglers to come up. The canoes are hauled up and concealed in the forest, and the track examined. A war-council is held, and the route marked, and the situation of the enemy discussed, and on a given day the march commences, each one shouldering his pack and stepping out in Indian file—the guides ahead, and closely followed by a few of the hardiest, boldest, and most experienced men at their heels. This line of march reaches many a mile if the war party be a numerous one. The pace is rapid so long as they are in neutral territory, but slackens as soon as they reach the borders of the enemy's country. The leaders then proceed more warily as the enemy, if forewarned of their approach, are pretty sure to be posted in ambush by the way.

As Dyak warfare consists of surprises, they do not attack a village, or a cluster of villages, if their approach has been discovered and the population is on the defensive, but they content themselves with cutting off stragglers, and lie in ambush at the waterside for people going to bathe or to examine their fish traps, and in the forest for individuals out hunting or produce collecting. But if their approach be unknown, they so manage as to reach the settlement before daybreak ; generally they draw a cordon round it at midnight, and tighten the circle before day-break. If the ladders are down they rush up to the house and take it by storm ; if they are drawn up they hurl lighted javelins into the thatch and fire it. They never spare the men, and rarely the women. Heads are more valuable than captives, but they do sometimes make the women and children prisoners, and reduce them to slavery.

When argued with about their head-hunting expeditions, the Dyaks plead ancestral custom : "It is the custom of the white man to read books, it is the custom of the Malays to say their prayers, but it is our custom from ages to go on the warpath."

10. *Defensive Warfare.*

If the Dyaks have reason to apprehend an attack upon their village, they put it immediately into a state of defence, i.e., they raise a tall palisade around it and encircle this again with a wattle fence and *chevaux de frise* of spiked bamboos. The waterside, the landing-places, and the approaches to the village, are all spiked, and also the foot of the ladder, and they dig pitfalls in the pathway. Their valuables they conceal in the adjoining forest, or in the vicinity of their farms. The moment the enemy appears the sound of the *tawah* begs to announce their condition to their neighbours, and to summon them to their assistance. If they are heard help is sure to arrive *instanter*. If they feel confident of their ability to repel the enemy, they keep their women at home; but if there is any doubt about the matter, they conceal them with their treasures on the hills and flee into the forest to rejoin them at a rendezvous when resistance becomes hopeless. If they are in no hurry they fire the village before they leave it; if on the other hand they wish to gain time, and to divert the pursuit, they leave it for the enemy to plunder and burn.

A favourite stratagem is to entice the leading boats of the enemy into an ambush on shore. As everybody is anxious to be foremost in the race for heads, there are sure to be one or two boats so far in advance of the rest as to make it worth while to put them to their mettle. Some convenient spot is selected and a strong party placed in ambush among the trees. One or two men are thrown out to stroll upon the shingly bed to lure the enemy to their destruction. The moment they are caught sight of, the boats give chase, and as the warriors leap ashore, the men in ambush spring from their covert to their feet and hurl stones to shatter the shields, and engage with spears and swords in a short but desperate conflict. As the main body is seen winding up the river, whooping and yelling, and crashing up in clouds of spray and with a rush of waters, they plunge into the thicket with the heads they have obtained, and are far away before the enemy have recovered from their discomfiture, and are prepared to follow.

Another stratagem is one of ambush. When the head of the column is close upon them (the ambush), they discharge their muskets, leap from their ambuscade, and engage in a hand to hand combat. The Dyaks always waylay on the right-hand side of the line of march, as that side of the body is unprotected by the shield, which is carried in the left hand. A short, but desperate fight ensues, a few heads are taken, and the enemy scampers off with their dead and wounded.

before the main body can come up. The invaders pause a while until reinforced, and then pursue, but the enemy have taken advantage of this delay to plant *tukahs* in the path and *ranjans* in the water-way. Some are sure to get spiked, and another delay ensues. The ambuscade is by that time beyond pursuit. If the enemy are plucky, they form several ambuscades, and so impede the progress of the *bala* (war-party).

When acting on the defensive, if it is intended to entrap an enemy by water, it is customary for the entire force to divide into two equal portions, and to be hid in two branches of the main stream, and sufficient distance apart, and when the enemy are in between, to dash out simultaneously and take them in front and rear. If the invading force is too numerous to try this, is to lure the leading boats by a decoy boat into a position where by reason of the rapidity of the current and obstacles in the river they can be taken at a disadvantage, and to scamper off with a few heads after a desperate and hurried fight before the main body comes up.

It is a defensive measure to blockade the passage up the river with huge trunks of trees felled right across, which form a temporary barrier to quick progress; stakes and tukam (?) are placed in all suitable places, and in the shallow beds to impale the feet, as the men have to tumble out of the canoe to haul it over the rapids, &c.

11. *Heads.*

The way of cutting off the head varies with the different tribes. They do not always cut it off the same way. The Dyaks and Bekatans have each a different way, and by the manner of it it is known whether it is a *pumpong iban* or a *pumpong Bekatan*. The Dyaks sever the head at the neck, and so preserve both jaws; they scoop out the brains through the nostrils and hang it up to dry in the smoke of a wood fire—the fire, in all probability, at which they are cooking their victuals. Sometimes they tear off a bit of the cheek skin and eat it as a charm to make them fearless. They cut off the hair to ornament their sword-hilts and sheaths, &c. If the jaws drop they fasten them up, and if the real teeth fall out, or if they extract them, they fill up the cavity with imitation ones of wood. They put studs in the eye sockets, but do not carve the skull, as do the Kyans. They generally plug the nostrils with wooden stoppers. Everything is done to propitiate the head; food is put into its mouth, betel nut is prepared for it, and even a cigarette; it is implored to remain among them, and to induce

more of its friends to come that way and keep it company. They cut out the tongue.

The head does not in an expedition belong to the person who takes it. It belongs to the chief, and if there are several it is distributed among the leading chiefs. If only one head is obtained, and there are many claimants to the honour of *salaiing* it, it is broken into pieces, and a fragment given to each; but this is not popular with the Dyaks, and it is more usual for the most powerful chief to keep it. But the chief who *salais* a head undertakes a great responsibility, as he by that act aspires to be a war chief, and must lead the people on the warpath. They look up to him, &c. They do not mind his keeping the head as long as he gives them an opportunity of cutting off others. When brought home the head is hung up in the verandah of the house outside the chief's apartments along with the smoke-blackened cluster of heads depending from the sloping roof and overhanging the fireplace.

The Urn Ais believe that the persons whose heads they take will become their slaves in the next world.

12. *Captives.*

The Dyaks too often spare neither man nor woman nor child, but sometimes, when more humanely inclined, or when the opportunity offer, they carry the women and children away with them into captivity. But it is a remarkable fact that there are so few slaves, or persons of servile descent among the Dyaks. Other tribes keep their slaves in a condition of perpetual servitude, but the Dyaks allow their friends to ransom them, and if they still remain on their hands they adopt them into the tribe and enfranchise them. The ceremony is usually performed at a great feast, the owner announcing that he has freed so and so and adopted him as a brother, and he is presented by the chief with a spear, with which he is told to slay the man who dares hereafter call him a slave. They are not cruel to their captives, but humane. The one solitary instance in my experience of cruelty to a captive, is the one related by Rajah Brooke in his work.

13. *Cannibalism.*

[The following letter appears to have been sent to a Sarawak newspaper.]

"SIR.—I have just been reading a second time in 'Head-hunters of Borneo,' and in connection with it, Mr. Bampfylde's remarks, together with Mr. Bock's rejoinder. I have been

asked by the former gentleman to testify to his credibility, and shall therefore feel obliged if you will be good enough to insert these few lines for the information of the public.

" I have been 400 miles up the Rejang River since the publication of the above volume, and though I had not yet read the book, I took it with me and showed the plates to the natives of the interior; so true were they to life that resemblances were found in the portraiture to their own friends, and every detail provoked roars of laughter.

" Mr. Bampfylde has, however, been over six years in Rajah Brooke's service, therefore his testimony, I feel sure, is preferable to that of a mere traveller.

" I fully believe, with Mr. Bampfylde, that the natives were poking fun at Mr. Bock when they declared the Trings to be cannibals. I do not believe them to be such, for if they were I should have heard of their propensity long before Mr. Bock ever set his foot in Borneo, for we have occasional intercourse with some of the tribes of the Upper Mahakan, among whom Mr. Bock should have travelled instead of stopping short at M. Pehau, which can be reached from the sea by steamers, and which feels the influence of the spring tides. Had he accomplished the ascent from this point upwards, he would have endangered his neck it is true, but he would have travelled over new ground, and added to our knowledge. A few months ago I received a visit from a Long Gelat, named Bau Dias, who lives at the foot of the Mokan ranges, and I put the question relative to the alleged cannibalism of his neighbours, the Trings. He seemed surprised at my asking such a question, and said ' Of course it is not true, such a practice is unknown to us at Mokan.'

" I do not accuse Mr. Bock of wilfully publishing an untruth, but I fully believe his credulity was practised upon by his companions to discourage in him any desire to penetrate further into the interior.

" I do not think Mr. Bock will require to return any answer to what I have written. I, for my part, do not wish to engage in any controversy, and disclaim any obligation to make further reply.

" I have the honour to be, Sir,

" Your most obedient servant,

" (Signed) BROOKE LOW.

" SARAWAK,

" 20th September, 1887."

14. *Musical Instruments and Singing.*

Rudieng.—The European Jew's harp is a small musical instrument held between the teeth, and having a metal tongue, which, when struck by the finger, produces musical sounds that are modulated by the breath. In the Dyak rudieng, the little finger of the left hand stretches the string loop at the left end, and the thumb and first finger hold the metal handle; the cross-piece is held between the thumb and finger, and pulls the concave inside. It is used by a young man to talk to his young girl at night, when they do not wish the mother to overhear their talk—they are able to understand each other in the language of love. The length is $3\frac{1}{2}$ to $4\frac{1}{2}$ inches; the narrow end is $\frac{1}{16}$ to $\frac{1}{8}$ of an inch wide, and the broad end $\frac{1}{2}$ to $\frac{1}{8}$ of an inch wide. It is a perfectly intelligible wind instrument; a metal plate of unequal width, narrowest where it is held in the left hand, and widest where it is held in the right hand. The string is jerked by the tongue, which is likewise metal, vibrates and resounds in the cavity of the mouth. The sounds are modified with the breath. Other tribes in Borneo use a bamboo one; this was no doubt the origin of the Dyak one; the Maloh have taught the Dyaks the use of metal. Bamboo ones are not now in use among them. The case in which it is kept is a bamboo cylinder beautifully carved; the ground is coloured red with dragon's blood; girth about $2\frac{1}{4}$ inches, fitted with a carved hard-wood stopper. The metal is not flat, but almost imperceptibly concave.

Seruncui is made of a hollow gourd, *selang*, with a hole, and is one-stringed (*segu* cane), and is played with a bow, the string of which is of same material. The performer sits on the ground and holds the instrument between his toes, the knees bending outward, and the soles of his feet adjoining. The sound is that of a violin played with a bow, and is mournful, wailing, sobbing, heartrending, dismal, and gloomy. The instrument is held slanting, and the sounding cup on the side of the foot, with the stem resting on the left shoulder. The string must be watered with saliva to sound. The stock is 2 feet long, and of hard-wood (*bilion*). The cup is 12 inches in circumference, and is a gourd shell, called *geno-selang*, about the size of a teacup, and with a hole at the bottom. The mouth of it is covered up with a circular dish of soft wood, thin and close-fitting, and the seams cemented with wild wax. The bow is a bent cane, and the string a split rattan nearly 12 inches long. There is a moveable bridge on the dish for the string to rest upon. Sometimes the bowl is made of coco-shell.

The *bikan* is a rude-stringed instrument resembling a guitar,

and was formerly much in use. It was adopted from the Urus, and is more frequently found among the Seribas and Kalakan Dyaks than among any others. It is furnished with two strings (rattan) and two keys. The strings are pressed with the tips of the fingers of the left hand to modify the tone—there are no stops—while the nails of the fingers of the right hand brush the strings. The stock is glued into the beak or bill of a bird, the *kinalong* or *burong bilik*, and the body is coloured red with the colouring matter of a wild-growing, poisonous fungus. It is 3 feet long from end to end. The *blikuk* is hollowed out from the upper surface, and is covered with a thin plate of wood. The *safé*, on the other hand, is hollowed out from underneath, and is not closed up.

The *gendaw* is a wooden drum, shaped like an hour glass, one end covered with parchment, which can be tightened or slackened at pleasure, by means of cords; it is not beaten with drumsticks, but is struck with the fingers.

The *satong* is a cylindrical bamboo harp, or lyre, played upon with the fingers.

The *gulieng* is a bamboo pipe, with a plug at the mouth hole, and differs from a whistle in having finger holes, by means of which different tones can be produced. It is blown at the end like a flageolet, and the three finger holes are placed equidistantly. Four distinct tones are easily obtainable upon it, the lowest when all the finger holes are covered, and the other three by opening the finger holes successively.

The *kramong* is made of narrow slabs of wood or stone, which upon percussion with a wooden hammer produce a series of tones similar to those obtained on an harmonicon.

The *buso* is formed of a bow resting on the ground in a hollow vessel of earthenware or metal, and the string is made to vibrate with a plectrum.

The *klurai* is a wind instrument, constructed of a number of tubes, placed in a calabash with a long snout which serves as a mouthpiece, and which are thus sounded together; chords and combinations of chords or harmony can be produced from it. The finger holes are, some of them, placed laterally, others on the upper surface, and others again on the lower surface.

Singing.—The *pelundai* is the recitative in which the natives pour forth their feelings, their sorrows and disappointments, their desires and ambitions. It is full of feeling, and the voice is modulated to express all its shades. The utterance is slow at first, but is rapid towards the end. There is repetition in redundancy of expression and reiteration. The voice is often tremulous with passion, like the wail of a broken heart—a mournful cadence like the dirge of the dead.

Very different are their war songs. The bard leading the song, chants in a low monotonous solo, his voice rising and falling as he chants of love or war, and is accompanied by the whoops, and yells (fierce, exultant, presumptuous, and cheering) of his companions, and by the clashing of shields and nodding of plumes as the warriors, in their excitement, don their feathers and seize their arms, singing of the deeds of heroes of the olden days and lovely women whose charms gave rise to deadly strife and bloody feuds. These songs have the same effect on the natives of Borneo that the war drum and trumpet-blast have on the soldiers of Europe. The tones of the minstrel are clear, and bold, and tremulous, and culminating at times in a prolonged chorus which the others take up with something like a prolonged yell.

[*To be concluded.*]

MARCH 8TH, 1892.

EDWARD B. TYLOR, Esq., D.C.L., F.R.S., *President, in the Chair.*

The Minutes of the last meeting were read and signed.

The following presents were announced, and thanks voted to the respective donors :—

FOR THE LIBRARY.

- From the AUTHOR.—*Yorkshire Folk-Talk.* By the Rev. M. F. C. Morris, B.C.L., M.A. 8vo. London, 1892. pp. xii, 408.
- *Vocabularies of the Tlingit, Haida, and Tsimshian Languages.* By Dr. Franz Boas. 8vo. pp. 36.
- *Aboriginal Skin Dressing.* By Otis T. Mason. 8vo. pp. 37. Plates.
- *The Development of the American Rail and Track, as illustrated by the Collection in the U.S. National Museum.* By J. Elfreth Watkins. 8vo. pp. 58. Woodcuts.
- *Te Pito te Henna, or Easter Island.* By William J. Thomson. 8vo. pp. 108. Illustrated.
- *Projet d'entente internationale pour arrêter un programme commun de recherches Anthropologiques à faire aux conseils de révision.* By Dr. R. Collignon. 8vo. pp. 11.
- *Estudio sobre el sistema evolucionista.* By Emilio Cuervo. 8vo. Bogotá (Colombia), 1891. pp. 73.

- From the PUBLISHER.—*Marriage and Disease.* By S. A. K. Strahan, M.D. 8vo. (Kegan Paul, Trench, Trübner, and Co.) London, 1892. pp. viii, 326.
- English-Italian and Italian-English Dictionary. By B. Melzi. 8vo. (Hirschfeld.) London, 1892. pp. 608.
- From the GOVERNMENT OF NEW ZEALAND.—Statistics of the Colony of New Zealand for the year 1890. Fol. Wellington, 1891. pp. 391.
- From GEORGE W. BLOXAM, Esq.—The Ojibway Language. By the Rev. Edward F. Wilson. Sq. Tt. Toronto, n.d. pp. 412.
- From the ACADEMIE DES SCIENCES DE CRACOWIE.—Rocznik Zarządu. 1889. Pamietnik Wydziału matematyczno-przyrodniczego. T. 18. Rozprawy Wydziału matematyczno-przyrodniczego. Ser. ii. Tom. 1, 3.
- From the BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.—Report, 1891.
- From the GEOLOGISTS' ASSOCIATION.—Proceedings. Vol. xii. No. 6.
- From the EDITOR.—The American Antiquarian. Vol. xiv. No. 1.
- *Bullettino di Paleontologia Italiana.* Tom. vi. N. 11 e 12.
- *Nature.* Nos. 1165, 1166.
- *Revue Scientifique.* Tom. xlix. Nos. 9, 10.
- *Science.* Nos. 469, 470.
- From the AUSTRALIAN MUSEUM.—Records. Vol. i. No. 10.
- From the ANTHROPOLOGICAL SOCIETY OF BOMBAY.—Journal. Vol. ii. No. 6.
- From the ANTHROPOLOGISCHE GESELLSCHAFT IN WIEN.—Mittheilungen. Band xxi. Heft 4 bis 6.
- From the DEUTSCHE GESELLSCHAFT FÜR ANTHROPOLOGIE, ETHNOLOGIE, UND URGESCHICHTE.—Archiv für Anthropologie. Band xix. Heft 4.
- From the ROYAL GEOGRAPHICAL SOCIETY.—Proceedings. Vol. xiv. No. 3.
- From the ROYAL SCOTTISH GEOGRAPHICAL SOCIETY.—The Scottish Geographical Magazine. Vol. viii. No. 3.
- From the ROYAL SOCIETY OF ANTIQUARIES OF IRELAND.—Journal of the Proceedings. Vol. i. No. 8.
- From the SOCIÉTÉ D'ARCHÉOLOGIE DE BRUXELLES.—Annuaire. 1892.
- From the SOCIETY OF ANTIQUARIES.—Proceedings. Vol. xiii. No. 4.
- From the SOCIETY OF ARTS.—Journal. Nos. 2049, 2050.
- From the SOCIETY OF BIBLICAL ARCHAEOLOGY.—Proceedings. Vol. xiv. No. 4.

Mr. J. ALLEN BROWN read a paper on "The continuity of the Palaeolithic and Neolithic Periods."

Prof. RUPERT JONES, Dr. H. WOODWARD, and Dr. EDWARD B. TYLOR joined in the discussion, and the Author replied.

A paper by the Rev. JAMES MACDONALD on "East Central African Customs" was read.

On the Continuity of the PALEOLITHIC and NEOLITHIC PERIODS.

By JNO. ALLEN BROWN, F.G.S., &c.

Introductory.

It has been generally assumed that a break occurred between the periods during which this country and, in fact, the continent of Europe was inhabited by Palæolithic Man and his Neolithic successor, and that the race or races of Palæolithic folk who hunted the elephant, rhinoceros, cave bear, hippopotamus, reindeer, urus, bison, &c., were completely separated as by a chasm from the agricultural people, the herdsman with their oxen and sheep, and the tillers of the soil of the so-called Neolithic epoch, implying that man in Britain had changed suddenly from a low savage hunter to a half-civilised farmer and drover.

No physical causes, no adequate reasons have in fact ever been assigned for such a hiatus in human existence, certainly the geologist can offer no evidence in support of it. Some writers have suggested that the man of the drift period was entirely exterminated by the better-armed invading Neolithic race; others suppose him to have become extinct like the tichorine rhinoceros and mammoth, but why he should have fared worse than the reindeer and other creatures who survived, it would be hard to imagine.

The original division of the stone age into two distinct periods may however be accounted for; in the first place, up to the time when M. de Perthes and Dr. Rigollet made the discovery of the earlier relics of man, the stone age was only represented by polished celts and the well marked highly-finished chipped specimens; these formed a striking contrast with the rudely-fashioned pointed and oval implements which at first were found, and for a long time were the only drift forms believed to be of human origin.

Gradually, however, other tools and implements having their analogues in the Neolithic, or surface period, were met with in

the drift gravels and brick earths, and as the contents of caves and rock shelters were examined, it became evident that they were accumulated at different periods, and with minor exceptions long after the deposition of the oldest valley drift of the Thames or the Somme.

Another reason may be found in our want of knowledge, until comparatively recently, of later Quaternary geology—i.e. of the origin, formation and sequence of the deposits which followed the deposition of the high level implementiferous drifts, such as the brick earths, head and rubble, and other accumulations which bring down geological evidence to the historical period. The investigations of Professor Prestwich and others have thrown much light on the deposits of later date than the river drift, and with them, as will be seen, the relics of man are associated, together with evidence of the gradual extinction of some animals and the retreat of others.

With these changes came alterations in the types and forms of stone implements, and if the latest are compared with the earliest forms the difference is very striking; but when a large series from different levels of valley drift and caves, and from the surface is studied the evolution of the more recent from the older forms is apparent, and a continuity is evident between them all. The supposed break in the continuity of the stone age in this country is bridged by the discovery of implements of later Palæolithic type and of others which from their form may be regarded as of transition or intermediate age, in some combes and dry valleys associated with deposits of chalk and flint rubble in parts of Sussex, as well as with other accumulations and formations to which I shall refer as being of more recent date than the high level river drifts. The gradual change in mammalian life which appears to have accompanied these higher stages of the stone age will also be considered.

The French and Belgian geologists, whose countries have afforded them much better material for studying this question than we have in England, are divided in opinion as to the continuity or otherwise of the Palæolithic and Neolithic periods. M. G. de Mortillet and M. Cartailhac among others have asserted that a great break exists between them, when the subject is considered from the three points of view of ethnology, palaeontology, and workmanship while MM. d'Archiac, Quatrefages, Dupont, Joly, Lazalis de Fondouce, and many others, have stated that there is evidence of continuity between these so-called epochs both as to the fauna and also as to the gradual advance in skill and knowledge of the fabricators of stone weapons and tools. M. Joly asserts there is a direct filiation between the ruder workmanship of the St. Acheul and other

high level drifts and the more skilled handiwork of the Neolithic period.

Although I shall have occasion to mention other localities in which implements of Palæolithic type have been discovered, I wish to draw special attention to the valleys and combes at and in the vicinity of East Dean, near Eastbourne, Sussex, as a district in which during the last few years flint implements have been found (associated with others of later date) which, if they had been met with in river drift and thus acquired the usual gravel-stained surface, would have been undistinguishable from many of the river drift specimens.

The district of East Dean is in a deep chalk valley with a gradual slope from the village of that name to the coast at Birling Gap. The valley widens in several places between the sea and the village, and several narrow transverse valleys lead into it, the general dip of which is also towards the sea. The high chalk hills form an important watershed to these lines of drainage.

At Birling Gap there is a low cliff about 25 to 30 feet high, through which a cutting leads to the beach. The section at this spot has the appearance at first sight of an old river channel extending about 350 or 400 feet in the cliff. This effect is however not due to ordinary river action, but, as will be seen later, to the agency to a large extent of underground water which, penetrating the adjacent hills, finds its way mostly beneath the surface to the East Dean and the other valleys connected with it, and obtains an outlet in the rubble deposits and chalk at Birling Gap.

The section at the Gap shows the following details:—At the top or the surface of the land are broken flints and beach stones with occasional pebbles of old rocks intermixed with argillaceous and chalky matter forming the soil. Beneath this is a very irregular deposit of flints, some of which are broken, but the greater part is composed of a compact mass of sharp and unaltered flint nodules intercalated with light brown calcareous rubble, the component parts of which are slightly rounded by the action of water passing through it; in some places it has a lenticular structure and the deposit has an appearance of bedding, but it is in appearance only. The aggregated flint deposit descends into a bed of yellowish brown slightly rounded chalk rubble in irregular tongue-like and contorted masses ending in scattered flint nodules intermixed with the calcareous debris.

Underlying the curiously massed deposit of flints and chalk

rubble, the latter extending to many feet beneath, is the solid chalk, in which the whole formation rests as in a trough extending up the lower slopes of the hills on each side. It is evident that the massed flint nodules once formed part of the layers of flints now seen in the high cliff to the east.

It is through the calcareous rubble and flint deposits as well as the solid chalk beneath, that the water finds its way to the sea and the drainage of a considerable extent of the adjacent country is effected.

In the upper part of the irregular mass of flints as well as on the surface of the land in this and the neighbouring valleys have been found implements of Palaeolithic type to which attention is now drawn.

The nodular bed varying in thickness, extends up the valley to the village of East Dean, and is also found in the valleys which are connected with the main outlet. It has a depth of more than five feet at East Dean Church, but is thicker in other places.

Covering the aggregated flint and chalk rubble bed as already mentioned, there is generally an argillaceous deposit which in some places is a mere trace, but often attains a thickness of 3 or 4 feet or more. This is the result of the long continued denudation of the hills, or matter brought down by rain and snow water. Intermixed with this are the remains of an old drift containing flint shingle with many flattened pebbles, of rocks, foreign to the locality, such as diorite, old sandstone, &c., which probably were deposited at the same time as the boulders and pebbles of old rocks which are met with at Selsey and many other places on the south coast.

Professor Prestwich has suggested that these erratics were transported by ice passing from the North Sea through the Straits of Dover at the latter part of the glacial period, and not by coast ice drifting from the coast of Brittany, which some geologists believe to have been connected in later Quaternary times with that of this country. He includes in the "rubble drift" series : "1st, the mass of angular detritus and rubble forming the head overlying the raised beaches ; 2nd, the beds of angular gravel and loam on hill-slopes or projected into the plains at their base and not referable either to marine, fluviatile, or glacial action ; 3rd, the trails of gravel not referable to river action in subsidiary valleys, ending at their junction with the main valley in a fan-shaped spread of gravel and brick earth ; 4th, the basement gravels of most valleys and the stanniferous gravel of Cornwall ; 5th, trails in some valleys of blocks of foreign origin ; 6th, slight irregular scatterings of angular débris, clay, and loam or brick earth on the sides and at the

base of hills; 7th, the ossiferous breccias in fissures of the limestones of Devonshire and South Wales," and he regards them as having probably been formed *after* the deposit of the raised beaches of the South Coast, &c., which he considers are "contemporary with the lowest and therefore with the newest of the fluviatile drifts of the valley, and consequently that high level gravels are older than the beaches."¹

Professor Prestwich believes the rubble drift series, as above divided, to have been formed after a period of submergence of short duration, "the submerged land was again raised—not by one continuous movement but by a succession of uplifts more or less rapid, with intervals of rest or slow movement." This, he says, "would produce on the slopes on all sides of the hills of the submerged area divergent currents which swept down the loose débris with varying rapidity and for varying distances." He does not overlook the effects of denudation and ice action but this preceded by a long period of time the introduction of the rubble drift, "which was the result of agencies independent of and subsequent to any visible exhibition of ice action." "That the disturbance indicated by the rubble drift was accompanied by a change of climate is shown by the circumstance that whereas during the time of the raised beaches sub-glacial conditions obtained and northern fauna survived, the deposits immediately following the rubble drift exhibit no glacial characters and both fauna and flora are of species living at the present day."

The rubble drifts have a wide inland range and to this series is in part to be referred the "head" of De la Beche, the sub-aerial detritus of Godwin Austen, the angular flint gravel of Murchison, as well as the "trail" of J. O. Fisher and the "warp" of Trimmer, &c.

I am unable to agree with Professor Prestwich in regarding the deposits of chalk rubble and head as the effect of submergence with more or less rapid episodes of upheaval, and, like Godwin Austen and other geologists, think sub-aerial action will account for many of the rubble deposits and detritus when accelerated by the cold of the later part of the glacial period and the atmospheric condition of great humidity which probably succeeded it.

Mr. Clement Reid believes "that the erosion of the valleys in the South Downs and the deposition of the eroded material in the form of widespread sheets of angular chalky detritus resulted from the fall of summer rain on a shattered surface of chalk rendered impervious by freezing during a winter of Arctic severity."²

¹ Q.J.G.S., vol. xlviii, part 2.

² "Pleistocene deposits of the Sussex Coast," Q.J.G.S., vol. xlviii, p. 2.

The valleys at and in the vicinity of East Dean owe their origin, in my opinion, to a large extent to the action of underground waters which falling upon the surface as rain and snow sink into the porous chalk; and only to a very moderate extent finds its way externally on to the lower ground. In alluding to such valleys as that at East Dean, with egress to the sea, Prof. Prestwich has said lines of permanent water level are produced at the base of the hills, variable water levels above, and temporary water levels near the higher parts of the ground, and which are the cause at times of the formation of bournes.

"Under these conditions of the proximity of the permeable strata to the sea, as the inland underground waters are always maintained by the rainfall in the body of the hills at a level higher than the sea level, the hydrostatic pressure" "tends constantly to force the fresh water outward and to stay the influx of the sea water, thus causing a permanent flow of the inland water seaward where it escapes as springs between the tide levels."¹ As he points out, these lines of underground drainage are not level over the same area, but vary according to the unequal density of the chalk itself. This probably accounts for the unequal deposition of flint and calcareous rubble, as well as for the different physiographical features of the same locality.

The second agent which jointly with the flow of subterranean water to the sea has caused the erosion of the valleys and the accumulation of the harder material is carbonic acid, which is contained in rain and snow water.² It is generated also in crenic and humus acids. The effect of this solvent is to carry off in solution the carbonate of lime in the chalk, leaving a small residuum of earthy matter; a certain amount of fine calcareous matter is also no doubt conveyed in suspension or mechanically. As a result of these agencies, the chalk is removed and the flints remain, the permeable and soluble chalk is withdrawn and carried to the sea, and the strata of flints are let down and massed together as the work of erosion is continued. This effect is very noticeable at Birling Gap, where in the high cliff to the East the horizontal lines of flint nodules are seen in their original position, while beneath the concrete mass of flints in the valley may be observed the subangular discoloured chalk rubble appearing like an old river bed in the cliffs. - I have entered as fully as the limits of this paper will allow into the relative age of these deposits as in it is involved the age of some of the specimens I have to describe.

Although geologists may differ as to the cause of the rubble

¹ Prestwich's "Geology," vol. i, p. 164.

² At ordinary temperatures water will absorb its own volume of carbonic acid, but at 32° Fahr. nearly twice its own volume.

and other deposits before mentioned, they all agree in regarding them as of post-Glacial age, and as formed after the deposition of the high level river drift of the valley of the Thames, &c. We might very well therefore, without the discovery of the implements of the old forms at East Dean and in the other dry valleys and combes, regard such deposits as likely to contain flint implements of a period intervening between that of the old river drift and the age of polished stone.

It is of importance to note that the pointed and other implements of older drift form have been discovered in the compact mass of flint and chalk rubble at East Dean, as well as on the surface of the ploughed fields, and with them have been found instruments which seem to be of intermediate forms between the old and new stone epochs, associated with others which certainly belong to a later period.

The formation of a combe or valley by these agencies must necessarily be a very slow process, even though it may have been accelerated by semi-glacial conditions of climate and other causes; the time necessary to remove the chalk above and between the original lines of flints and aggregate them into the unstratified masses in the upper part of which the implements of Palaeolithic type have been discovered, must have been great, and may be to a certain extent comparable with the erosion of a valley by ordinary fluviatile action and its infilling with drift.

Mr. Stephen Blackmore, who is employed on a farm near Birling Gap, has for years devoted his spare time to the collection of flint implements from the district; he is a man possessing considerable knowledge on the subject as well as great natural intelligence, and has assured me that he not only has obtained specimens of Palaeolithic type from the upper part of the bed of flints in the East Dean Valley, but that he has also found them in the Cuckmere Valley, and elsewhere in the vicinity, under similar conditions.¹

That there was in late Quaternary times a period during which much of the South Coast was depressed below sea level is known; it is demonstrated by the raised beaches at Brighton and elsewhere, and that it was followed by an uprise and the formation of rubble deposit, in which remains of the extinct Quaternary mammalia have been found, is generally admitted.

¹ It appears hardly necessary to say that these implements which it is suggested may be of late Palaeolithic age must not be confounded with the far more ancient implements found by Mr. Hilton of East Dean on the ridge 350 ft. O.D. at Friston, which if not of the Plateau age, cannot be of a later epoch than that of the river drift gravels west of Southampton and the Foreland, Isle of Wight, described by Mr. Coddington, &c.

During this period of slow upheaval, and for a time afterwards the present seaward valleys extended much further into the Channel than they do now. The subterranean erosion of these valleys has continued in action ever since the last uprise of the land, and would have been in part synchronous with the formation of the chalk rubble or "Elephant bed" at Brighton.

It is probable that the Palaeolithic implements discovered just beneath and on the surface at East Dean, and in other dry valleys and combes, have been preserved by the superficial deposits of argillaceous chalky matter, resulting from the denudation of the adjoining hills, which, though it may have been in part carried away by streams in very wet seasons, has yet been sufficient to cover them up in many places in the same way that the compact broken flint and nodular bed has itself been preserved.

There are several dry valleys in Kent as well as Sussex, in which Palaeolithic implements have been discovered, among which may be mentioned the valleys in the chalk at West Wickham, described by Mr. George Clinch: they were found on the surface "associated with a stiff ochreous clay," and many of them were partly, or wholly, stained with that deposit. These implements are ovoid and pointed, or tongue-shaped, and there are also "some intermediate forms."¹ "Neolithic" flint relics have also been found in the same localities. The chalk in these valleys is broken up into a rubble and mixed with pebbles, and ochreous clay; the valleys at West Wickham have probably been partly formed by the action of underground water as at East Dean, and the implements of old forms were preserved by the same kind of deposits as in the latter locality.

The valleys at East Dean, and in other parts of the chalk country of Sussex and Kent, must have been occupied by man for a very long period. The out-crop of flints furnished him with the material for his work, and he settled in such places, and fabricated his tools and weapons of flint, which were probably distributed by way of barter with distant tribes.

That this was the case is shown by the enormous number of worked flints which have been found in the valleys and on the slopes of the hills. The fields are literally strewn with flakes and broken pieces mingled with naturally fractured flints, and they are constantly being turned up by the plough.

Among them are specimens, which, if form is to govern their classification, may be properly described as intermediate between the later Palaeolithic and the period of polished stone. The number of ground celts found bears no proportion to the chipped

¹ G. Clinch, "Arch. Cantiana," vol. xiv. "Proc. Soc. Antiq." II, Section xi, 161 *et seq.*

specimens, of which very large collections have been made,¹ though the well-defined Palaeolithic implements are also rare as compared with those which appear to be of transition and later date. The extremely rude manner in which many of the implements from the South Downs, near Eastbourne, have been chipped has been noticed by Sir J. Evans.

Among the specimens of Palaeolithic type found at East Dean and its vicinity are the pointed forms, some of which are chipped all over, and a few have been met with in which the smooth part of a nodule has been retained for use in the hand; both are comparable with the same forms from the river drift; others are oval, chipped all round the periphery; they were probably mounted with a withe, as double-edged axes, and with them are thick heavy ovoid implements, another drift form, as well as others of Palaeolithic type.

One specimen should be specially mentioned as showing the probable continuous occupation of these valleys from the late Palaeolithic into the Neolithic period. This is an early drift implement with thick ochreous surface, refashioned in later Paleolithic times. It is a large, probably a broken implement which has been reworked, but so as to retain the cumbrous butt; the point, although rechipped, is characteristic of the earlier period. The newer chipping has a white patina, like most of the other specimens from East Dean with which it was found.

The work in many of the specimens is neater than the general run of drift implements, though among the latter are frequently found implements of pointed type which are beautiful examples of flint chipping. Many of the implements of most ancient type appear to have an older surface than those which are undoubtedly of later date.

As I have already mentioned, there are flint weapons and tools which appear to be of transition or "Mesolithic" forms, between the above and others which are of distinctly Neolithic age. Among the former are the axes or celts; these are neatly chipped all over, and were evidently used like their Paleolithic prototypes from the drift, for fixing in clubs; these more advanced axes have been found in the lower ground (mid terrace gravel) at Acton, at the level of 50 ft. O.D., at Poitou (France) at the same relative level. I have similar specimens dredged from the Thames, and Mr. Lawrence has axes of the like form in his collection. Other examples may be found in the Ethnographical Museum (Pitt Rivers' Collection) at Oxford, from Shrub Hill, Norfolk; many other recorded specimens could

¹ Mr. R. Hilton of East Dean has made a large collection, and I have to thank him as well as Mr. S. Blackmore for furnishing me with specimens, some of which are here represented.

be cited. Rough hewn axes chipped over the entire surface, pointed at the apex and worked to an edge at the other end, are so much like some of the axes from the drift, it is doubtful whether they should be classed among the drift forms or those of intermediate type—several of these are figured in Sir J. Evans's "Ancient Stone Implements." There are also among the East Dean specimens double-edged axes which appear to be of transition age and are similar in form to a large specimen now exhibited, discovered in the brick earth, three or four feet from the surface at Iver, Middlesex, and chipped flat oval implements apparently more advanced than those from the drift, also large convex and concave scrapers with coarsely worked edges. Several spear heads formed from flakes, with a worked depression on each side of the butts for the purpose of securing them to the shafts have been met with; they are all made alike and certainly show a slight advance upon the spear heads discovered by me at the old workshop floor, or working site, of the later Palæolithic age in high level gravel at Acton, where a large number were found—there are other spear or lance heads from East Dean, which correspond closely with some of the latter, i.e., flakes trimmed at the point or sides only.

The axes with a stop-ridge or hump which have been met with at East Dean are, perhaps, more truly of later type, though this form is represented in my collection by coarsely worked specimens of the like shape from the drift of Suffolk, showing the continuity of the same design.

In order to show that the same forms as those from the valleys of Sussex occur in the river drift of the Thames valley, I have placed upon the table in juxtaposition with them a series from the latter; most of them would be undistinguishable, except that the surfaces are mostly white in the one case, and stained by contact with gravel in the other.

A number of implements of the more advanced form of double-bladed axe found at East Dean, &c., show a further development of this ancient weapon, which had its origin in the drift period, or earlier. In these later types there is a wide depression worked between the two cutting edges, evidently for the reception of the bent branch by which they could be hafted. It is remarkable that the hafting of a stone with a bent or split bough, to form an axe or hatchet, or held in the double coil of a withe for the like purpose (in the same way that a blacksmith uses a hazel branch to hold his punch at the anvil) should have been originated in the earliest period of man's history, and have been continued down to our own days among existing savages (such as the Australians, some tribes of North American Indians, &c.), and like certain forms of life, which in distant epochs

were distributed all over the world, are now found only as survivals in isolated places. That this mode of hafting was continued from the Palæolithic into the Neolithic age is shown by the fact that a ground celt was discovered near Oxford with the decayed bent branch coiled round it—it is now in the Ashmolean Museum. The same kind of axe is figured on some of the sculptured Dolmens in Brittany.

There is no doubt that the club with the naturally broken stone, or later, the chipped stone, and still later, the ground celt, shows the like evidence of ancient origin, and of continuity into the present day of another form of axe or hatchet. Two series of specimens are now exhibited, showing the evolution and continuity of the two forms of axes from the Plateau period, through the Drift and intermediate or Mesolithic epochs into the age of metal.

General Pitt Rivers was the first to draw attention to the origin and evolution of many weapons and tools in a series of valuable papers elaborately illustrated published in 1867,¹ in one of which he shows the gradual evolution of the modern iron axe from its prototype in the earliest Stone age.

Flint punches or knapping tools and hammer stones, much battered from use, are often found at East Dean, &c., and the latter, as pointed out to me by Mr. Cunnington, are not simply spherical pebbles, but such rolled stones are selected as have an axis in a definite direction; they have a regularly rounded surface at one end which is comparable with the rounded end of the flaking hammer of a Brandon gun flint maker, while the other, if not already adapted for use in the hand, is slightly trimmed for that purpose; larger cylindrical stones have also been met with which have been worked at one extremity into a flat or plane, which Mr. Cunnington has suggested may have been used as small anvils. I have found stones in the drift which have a flat surface, showing sundry "bruises" which may be accounted for in the same way; the hammer stones of the drift are generally, however, of quartzite.

Small and larger horse-shoe or thumb flints are of frequent occurrence but they are not generally so small and neatly formed as most of the specimens found on the surface. Most of the few ground implements which have been found have been chipped after they have been polished; whether this arose from an indisposition on the part of the makers to devote the time and labour which were necessary to regrind them, or with that conservative clinging to old ways and customs, which is common to all savages, they reverted to their old method, it would be

¹ "Primitive Warfare," by Colonel A. H. Lane Fox, now General A. H. F. Pitt Rivers, "Journ. Royal United Service Inst.," 1867-8-9.

hard to say ; in the latter case it would be indicative of the art of grinding having been but recently introduced.

A large number of coarsely chipped rudely spherical implements have been found, about two and a half to three inches in diameter, which exhibit no abrasion whatever and the like forms have been discovered at Cissbury. They appear to be too large for sling stones, which there was, in fact, no need to make, as the stones on the beach would have better served the purpose.

Oval weathered beach-stones, probably intended for this purpose, have been found at Cissbury, where the same kind of globular chipped implements have also been met with. It is difficult to assign a use for them ; it is probable they may have been employed when covered with skin with a thong attached as a kind of bolus, or secured in some way to a short staff like the "morning star" of mediæval times, or even as maces when firmly fixed to the end of a short club ; in either case a very effective weapon could be easily constructed.

The great difference in the patina of the implements and flakes from East Dean is a noticeable fact. Some of them are porcelainised to a much greater depth than others, and though they are generally bleached there are specimens in which the surfaces have suffered little or no alteration. The greater antiquity of some of the specimens seems to be indicated not only by the greater thickness of the patina but in the pittings or slight erosion of the surface seen in some of the older specimens, an effect probably due to such solvents as humus or crenic acids acting during a long period. Almost all the relics of human handicraft appear to have become entirely bleached before they have been scratched by the plough or other agricultural implement, but some specimens have a peculiar rubbed or scratched appearance, as if they had been used for planishing or smoothing.

Mr. E. H. Willet discovered a pointed flint implement of Palæolithic type weathered white, and with a slight patina in the combe rock pit near Portslade, near Brighton, associated with the teeth of the elephant and a tooth of rhinoceros *tichorinus*. It was found at the depth of 15 feet from the surface, and is described as being very like some of the implements from the Somme.¹ Of the deposit in which it was found Professor Rupert Jones says :—“Two uneven jagged lines are seen to traverse the chalk rubble mass. These may be produced by water action, but the fainter line above may be referable to infiltration of surface waters.” Another was found near East Wittering with bones and fresh water shells ; the age of the deposit is, however, doubtful.

¹ Dixon and Jones’ “Geology of Sussex.”

As the fauna of the rubble beds, head, &c., is an indication of the age of the flint implements which have been found associated with them it is of importance that these, the last accumulations since the period of the high level river drift, should be considered.

Fossil bones have been found in the flint and rubble deposits in the valley of East Dean and also at Cuckmere, but they have not been recorded in any publication. At several places at and in the vicinity of Eastbourne the remains of Quaternary mammals have been also discovered in calcareous rubble and flint deposits. Dr. Mantell has described the bones of *Hippopotamus*, *mammoth*, and deer from that locality. In digging the foundations of the Town Hall at Eastbourne similar discoveries were made; the Caldecott Museum there contains many specimens.

Murchison refers to the discovery of *Elephas* at Wiggenholt. Whether, as Professor Prestwich suggests, rubble drifts are in part due to semi-glacial action or not¹ it is evident, as he says, that they have been formed after the deposition of the raised beaches, and their deposition must have proceeded synchronously with the later stages of the erosion of the valleys. A well-known instance of the formation of detritus, composed of calcareous rubble and flints, is the thick deposit above the elevated shingle at Brighton. According to Dr. Mantell it attains a thickness of from 50 to 60 feet, and in it have been discovered the bones and teeth of *Elephas primigenius* and *Rhinoceros tichorhinus* low down in the deposit, and at various depths, *Equus fossilis*, *E. plicidens*, *Bos*, *Cervus*, *Asinus fossilis* (Owen), &c. Dr. Mantell mentions the discovery of a similar assemblage of fossils at Patcham in the same kind of rubble bed. Murchison refers to the teeth of the *mammoth* as being found in the lower ground of the cliff range (80 to 110 feet) at Folkestone, in a detritus of broken chalk and flint, and alludes to the exhumation of portions of the tusks of the same animal from beneath 15 feet of the like deposit in the lower part of the cliff towards Shakespeare's Cliff, near Dover. In the valley at the back of Dover castle and at the depth of three or four feet from the surface I have found flint flakes intermixed with chalk rubble. To show the continuity between the Quaternary and the existing fauna found in such calcareous deposits, I may mention that the remains of red deer have been found under the like conditions near the barracks at Brighton and also at Copperas Gap, near Hove. Many other instances show the varied character of the mammals which have been discovered in beds of chalk rubble and flints. It is unnecessary to refer to deposits of rubble and head out of the chalk district, in which the remains

¹ "Q.J.G.S." vol. xlvi, p. 2.

of Quaternary fauna, &c., have been discovered. The contemporaneity of Man with the formation of the mud deposits (of Dixon) at Thorney, Selsey, Bracklesham Bay, Bognor, Littlehampton, Worthing, &c., in which remains of mammoth have been found, is generally admitted.

It is indisputable that many of the now extinct Quaternary animals lived on into the period when the rigours of a glacial climate were succeeded by more temperate conditions; that some of them existed even into historic times will be seen later. The flint implements discovered at Birling Gap and other places, carry the sequence of the Stone age from the drift period into that of polished stone.

The flint instruments found on the surface and in the old mining shafts at Cissbury are in many cases similar in type to those found at East Dean, and, as General Pitt Rivers and others pointed out many years ago, a large number of implements of the same form as those found in the drift have been discovered in these ancient excavations. Others which I have obtained from Cissbury appear to be of intermediate type; no polished specimens have been found in the shafts, though a ground axe has been met with on the surface, which is probably of later date. The remains of urus are said to have been found in one of the pits with wild boar. It is probable that these flint mines are much older than the fauna discovered in them would appear to indicate. Comparatively few of the shafts were re-excavated. The bones buried in them were not numerous and many of them were no doubt entombed at dates far more recent than when the earliest shafts were sunk by the flint workers.

In the old mining workings and manufactory at Spiennes in Belgium described by MM. Briart, Cornet, and Honzeau de Lehaie and also by Rev. Magens Mello, we have a similar assemblage of implements. Although some of the specimens are carefully chipped into shape none of them present, as the latter says, "the wonderfully elaborated forms and the delicacy of the Neolithic weapons, &c., from the Danish tumuli and they probably belonged to an earlier stage of the Prehistoric period." Polished implements are rarely met with there, and such as are found are often rechipped showing *prima facie* evidence of a retrogression, "whilst there are a few which bear a resemblance to the river drift forms, broad at one end and pointed at the other;" others are like rudely chipped axes of the Danish kitchen middens.

The former appear to me to be of transition or Mesolithic type and taken in conjunction with other accumulations of the Stone age, there seems to be a direct filiation or derivation, as M. Dupont suggested, between the implements found at Spiennes, and the like forms, with the remotely connected drift specimens

found in the gravels, which the later people penetrated to reach the chalk in their search for flints.

The working sites at Pressigny le Grand, Charroux in Poitou, and many others, furnish the same kind of evidence.

Evidence afforded by Caves and Rockshelters.

The contents of caves and rockshelters have furnished remarkable evidence of the continuity of the existence of man in North West Europe, if they are studied collectively ; but when they are considered individually that evidence is not so apparent, although, as in some instances to be noticed later, there are caverns the contents of which appear to show they have been occupied continuously by Palaeolithic people as well as by their so-called Neolithic successors. Caves have been inhabited by man throughout a vast period, and it is very unlikely that the same cave or rockshelter should have been continuously occupied into the later stone period. Man of the latest or polished Stone Age had ceased to be a troglodyte, he built houses of wattle, earth, and large stones where he could get them, and he fortified the hill tops with ramparts and fosses within which the tribes withdrew with their cattle when in danger, and he raised chambered tombs covered with earth over the dead ; the most we can expect to find in caves and rockshelters is evidence of man's existence between the later stages of the drift period and of that which immediately succeeded it, and this is exactly what we generally get in such old sites.

Before this subject is considered, however, it would be well to mark the progress which had been made in the drift period itself. The oldest implements in the high level river gravels are either formed from nodules, naturally broken stones, or coarse flakes struck off without any method ; very often they have suffered much abrasion, and often have a thick ochreous patina ; these are always found near the bottom of the deposit. Whereas in the uppermost part of the beds of the high level drift, the weapons and tools are often formed from neatly made flakes skilfully struck off a *prepared* nodule. Long spear-head flakes afterwards carefully trimmed—effective borers, scrapers, both concave and convex, knives worked in double curves or with a slant at the point like many pen-knives of to-day, axes and other implements, are thus produced ; the tools and weapons are differentiated, and contrast with the simple combined tools and weapons of the early Palaeolithic folk.

Human progress is particularly marked by the discovery of an improved method of working the material. A vast period elapsed before man discovered the way to strike off long thin

flakes; to produce them, the nodule had to be first prepared and shaped as the gun-flint workman prepares his blocks of flint, and in detaching the long flakes the same skill as he shows had to be employed; any one who has tried to make long flakes will know how difficult it is to do so without adopting the same method of striking and using the rounded hammers, &c., with which he works, instead of which suitable stones must have been selected in the Stone age for the same purpose.

The flakes thus struck off, were thinned at the butts, and could be trimmed and secured to shafts as spears; this thinning out at the butt could only be produced by well-directed blows immediately behind the point of impact of the last flake. Knives and other implements could be formed in a similar way.

Under six feet of deposit at the higher part of Acton I discovered on a "Workshop floor" an assemblage of such spear heads and other tools and weapons all formed from flakes, and I have found the same in many places in the Thames Valley two or three feet beneath the brick earth, which appear to correspond in age with those from the old working site at Acton.¹

Such trimmed spear-head flakes often six inches in length, pointed by secondary work, are exactly like the stone spear heads of the natives of the Admiralty Islands, Australians, &c., and they show a great advance in effectiveness and skill beyond the coarsely worked nodule or rude flake of the men of the early drift period. In some of those found at Creffield Road, Acton, an approach to a stem was observable in many specimens.

Mr. Pengelly in his investigations at Kent's Cavern, has alluded to the advance shown in the implements formed from flakes and those made by working on the nodule, and it is important that this advance in the method of working flint should be alluded to before considering the contents of caves and rockshelters, as it is invariably observable in cave deposits of later Paleolithic age.

Caves and rockshelters, &c., have been classified, for the most part, according to the relative antiquity of the osseous remains found in them. Many of the less ancient of these dwelling-places would not have had so high an antiquity assigned to them but for the occurrence in them of the bones of the mammoth, bison reindeer, &c., the absence of which is supposed to mark the close of the Quaternary age. If the flint weapons and tools contained in some of the caves in the Dordogne had been met with at or near the surface of the ground in England, or had been dredged from the Thames, they would in this country have been included within the limits of the Neolithic period. It may be

¹ See "Palæolithic Man in N.W. Middlesex," &c. J. Allen Brown.

useful to quote M. Lartet's division of the life periods of the later Quaternary mammalia into four divisions based upon the extinction or disappearance of certain species which has been generally accepted, with the exception that according to some English geologists, the rhinoceros tichorhinus should be placed in the oldest list.

1	2	3	4
<i>Ursus spelaeus</i>	<i>Elephas primigenius</i>	<i>Megaceros hibernalis</i>	<i>Bison priscus,</i>
<i>Hyaena spelaea</i>	<i>Rhinoceros tichorhinus</i>	<i>cav.</i>	<i>Bos primigenius</i>
<i>Felis spelaea</i>		<i>Cervus tarandus.</i>	<i>(Urne).</i>

With these outgoing groups should also be considered the gradually increasing numbers of the existing fauna, the wolf, fox, hare, badger, brown bear, &c., but it is more particularly in the survival of the last two divisions and the mammoth into a later period than what is generally understood as the Palæolithic Age, that the continuity of man's existence can be shown.

Kent's cavern contains human relics associated with the remains of mammals extending over an enormous period. The stages of human progress, as indicated by flint implements, are marked off by calcareous deposits which leave little doubt as to their relative age or of the sequence of the animals with which they are associated. In the lowest or breccia deposit and crystalline stalagmite, were found flint implements of the old drift type, and like the earliest drift specimens, they are formed from nodules rudely chipped into the required forms. These are associated with the remains of machairodus, the cave bear, (*Ursus spelaeus*) and traces of *Felis spelaea*. Those of later date discovered in the cave earth above the breccia deposit were formed from flakes and were very numerous, and of a higher type; with these were remains of the cave hyaena, wolf, fox, glutton, badger, cave, grizzly, and brown bears, rhinoceros, horse, urus, bison, Irish elk, red deer, reindeer, mammoth hare, &c., the cave hyaena being, as may be expected, the dominant form. For the figures of these implements formed from flakes, see "A. S. Implements," Figs. 390, 391, 392 (the latter figure, as Sir John Evans says, is not unlike implements of the surface period), 393, 394, 395, 396. Of 397 he says, "there is little or nothing to distinguish it from the analogous implements of the Neolithic period," and they have been found in the French caves of much later age than that of Le Moustier. Mr. Pengelly has written of these implements fabricated from flakes, that they were made by "a race farther advanced in civilisation" than those found in the breccia deposit. Some are in form and character Neolithic, others are exactly like those transition or Mesolithic types of which I have obtained a large collection from Birling Gap and

its vicinity. The black band (the hearth of the cave men) below the granular stalagmite, and to a small extent intercalated with the cave earth, yielded 366 flint implements, flakes, and chips, besides bone implements, associated with remains of ox, deer, horse, badger, bear, fox, hyena, and rhinoceros. The mixed character of the fauna is noticeable in this, as in the cave earth deposit. Above this was found a miscellaneous collection bringing the sequence into the polished stone and bronze periods and thence into the historic period, as seen by the objects discovered, i.e., polished celt (McEnery), bronze socketed celt, spindle whorls, bone chisels, Roman and pre-Roman remains, &c. The animal remains found in association with them were brown bear, fox, badger, red deer, short fronted ox, sheep, &c.

Brixham cave has furnished but few implements and they are generally associated with the same fauna as Kent's cavern except the *machairodus*, of which a single tooth was found in the latter.

Here also we have an implement of drift type discovered in the oldest portion of the cave and in other parts implements formed from flakes, one of which Fig. 410 ("A. S. Implements") appears to be of much later date than the specimen for use in the hand ("A. S. Implements," Fig. 409), others like ("A. S. Implements"), Fig. 412, is a small horse-shoe scraper or "grattoir," a form which has been met with in some of the caves in France, and is of a type commonly found on the surface in England.

In the caves of Creswell Crags explored by Professor Boyd Dawkins and the Rev. J. Magens Mello, we find remains of a group of animals associated with stone implements of different dates. Taking the Pin Hole, Robin Hood, and Church Hole caves together, we have the spotted hyaena as the dominant animal, and its victims the grizzly bear, wolf, common fox, bison, reindeer, Irish elk, horse, woolly rhinoceros, and mammoth. The middle cave earth of Robin Hood Cave contained an enormous quantity of the bones and teeth of animals introduced by the hyenas with implements of flint and quartzite, a few of which are undoubtedly of early Palaeolithic type (as Figs. 43, 44, 45, "Early Man in Britain"), but in the upper cave earth they are of later Palaeolithic date; they are more highly finished articles of flint (the material brought from a distance) such as lance heads, trimmed flakes, and a flint borer, with simple and double scrapers. In a similar deposit (the upper cave earth) at Church Hole, were discovered bone implements and fragments of a rib bone with an incised figure of a horse. It is remarkable that in the Robin Hood cave a tooth of *machairodus* was found in the upper cave earth along with the more common animals,

and with flint implements, which if form and workmanship are to govern their classification must be regarded as of late Palaeolithic if they are not of transition age.

Professor Boyd Dawkins has come to the conclusion, as the result of his exploration of these caves, "that in the two lower stages the hunters are identical with those of the river drift, while the more highly finished articles, which imply a higher and probably a different social position, appear in the upper series."

In concluding this cursory view of the evidence afforded by English caves, I should mention that Sir J. Evans says, "Although in some instances the river drift and cave deposits belong apparently to the same period, yet in others it seems probable that we have in the caves, relics derived from a period alike unrepresented in the old alluvia and in the superficial soil; and which probably belong to an intermediate age, and assist to bridge over the gap which would otherwise intervene between the river drift and the surface period, although he did not consider that such good evidence of a sequence in the order of deposition of their contents can be observed as in the caves of the South of France and Belgium." It is noteworthy that Dr. Stevens, who was the first to discover flint implements in the high level drift at Reading, says that they have been deposited at such widely different periods and under such a variety of circumstances that we cannot be surprised if they approach the Neolithic forms.

In the caves and rock shelters of France and Belgium we have the strongest evidence of gradual advance not only in the art of chipping flint, but also of increased specialisation in the forms into which the material was worked; the dominant type of the old drift, the pointed implements formed from pebbles or flint nodules, intended for use in the hand, "claw-like, &c.," and the few rude hatchet-like and other simple instruments are passing away—in fact the "*coup de poing*," the implement for all uses, can hardly be said to be represented in the caves of the Dordogne, and it is replaced by implements made from flakes. The instruments from the most ancient of the groups of caves to which M. de Mortillet has given the name of Le Moustier are represented in the latest stages of the high level river drift (Acton working site, &c.), and they are also fabricated from flakes struck off the nodule and not (perhaps with a few exceptions of flattened pear shape) by working on the nodule itself.

M. de Mortillet has divided the Palaeolithic period into four stages:—1st, the *Epoque Chelienne* or *Acheuléenne*, which applies to the remains found in the higher level river drift; 2nd, the *Epoque Moustierienne*; which includes the contents of the cave

of Le Moustier and some other caverns both in France and Belgium, and later river deposits ; it is marked by the occurrence of large broad chopper implements formed from flakes—long and broad flakes worked by secondary chipping into spear heads and other forms, " râcloirs " or side scrapers and other instruments, all characterised as being formed from flakes ; similar choppers have been found at High Lodge, Mildenhall, and elsewhere.

M. de Mortillet's classification is largely based on the improvements observable in the weapons and tools of man, and the fauna with which they are associated ; but the divisions are not sharply defined, and doubts have been reasonably expressed whether the next class should not be placed at the end of the series. With the flake-formed implements of Le Moustier were found remains of the mammoth and hyaena more abundantly than in the succeeding divisions, but they were associated with the bones of other animals, including the reindeer.

The third group classified as the *Epoque Solutréenne*, which includes the station of Solutré and the cave of Laugerie Hante, one of the caverns in the Gorge d'Enfer, Grotte de L'Eglise, all in the Dordogne, &c., is remarkable for a great advance in the form and workmanship of the specimens, especially those made from long flakes ; among them are delicately chipped lance heads, well made lozenge and leaf shaped arrow or small spear heads which are quite equal, as far as workmanship is concerned, to those of similar forms which are classed as Neolithic or surface implements in England. One of the types which characterises this epoch is the " pointe Solutréenne," i.e., long slender flakes worked to a willow-leaf form with a lateral notch at the butt, thus forming a tang or stem at the side for insertion into the shaft or handle, beautifully made piercers, " grattoirs " or scrapers rounded at one or both ends as distinguished from " râcloirs " or side scrapers, and also axes and other implements which resemble in a marked manner many of the implements found in the valleys of Sussex, Kent, and elsewhere. The knives and spear-heads tanged at the side have been dredged from the Thames.

The fauna in this division varied, and the abundance of the remains of the horse in the open air station at Solutré is a remarkable fact ; the number of horses there has been reckoned at more than 10,000 (Joly), and the bones form a wall round the principal enclosure. It seems difficult to believe that such a vast accumulation can have resulted from the animals being killed for food ; with them, however, were found remains of reindeer and the mammoth. In other caves and stations of this epoch, the remains of the former predominated, and in

company with these relics were the bones of many other animals, including besides the teeth of the mammoth, bones and teeth of *Felis spelaea* and the Irish elk.

The fourth division, L'Epoch Magdalénienne, comprising the caves of La Madelaine, Les Eyzies, Laugerie Basse, and others in the Dordogne, as well as similar caverns and shelters at Bruniquel, Massat, La Vache, &c., in France, and others in Belgium, is a group which has furnished abundant and interesting evidence of human progress in the number of works of art, such as incised and sculptured bones, ivory, and reindeer horns; this division is characterised by long, many of them very slender flint flakes, which have been converted by neat secondary work into knives, saws, piercers, gravers, and other instruments, but they do not show so much skill in workmanship as those of the age of Solutré. The "racloirs," or side scrapers disappear and are replaced by "grattoirs," or flakes chipped at the wide end, a type which is often found near the surface in Sussex and elsewhere, and which appear to be akin to the horse-shoe scrapers or "thumb flints." The lanceolate forms are all chipped on one face only, and not on the flat part of the flakes, but they differ from the leaf-shaped lance heads from Laugerie Haute, &c., in not being nearly so beautifully made.

The remains of reindeer were most abundant in this group of caves, &c.; those of mammoth very scarce; but the horse, wolf, fox, and hare, wild boar, bison, &c., are strongly represented. The mixed character of the fauna is seen also in the occurrence of the remains of the reindeer with the roe, in the cave of La Madelaine. Some bones of the cave tiger were met with at Les Eyzies, but those of the cave hyena were absent.

The age of Cro-Magnon, which includes the well-known cave of Aurignac, Grotto des Fées, and numerous others, appears to be intermediate between the last two groups; part of an elephant's tusk was found at Cro-Magnon, and remains of rhinoceros at Aurignac, but in all the horse was more predominant than reindeer. M. Lartet based his opinion of the antiquity of the cave of Aurignac upon the occurrence of the bones of the cave bear and cave hyena¹; the remains of the bison, wolf, and the roe and stag were also discovered, but the fox was the most abundant animal whose bones were found. Associated with these were flint lance heads not so skilfully made as those of Solutré, hammer stones with central depressions, perforated and engraved reindeer horns, &c.

MM. Hamy and Quatrefages have referred the human relics of the last two epochs or divisions to the same race of people,

¹ "Sur la coexistence de l'homme et des grands mammifères fossiles," "Ann. Sciences Nat.," vol. xv.

i.e., to what they have designated the Cro-Magnon race, of whom the latter says, "They must have known both the latest times of the reindeer age and the earliest of the present epoch."¹

Among the figures engraved on a portion of antler discovered at Laugerie Basse (Magdalenien period) is a naked man stalking a bison according to M. Massenat, but the victim is considered to be the Ursus by Prof. Boyd Dawkins, on account of the double curvature as well as the length of the horns; this suggestion may be indicative of the abundance of that animal at that time.

The caves and rockshelters of La Madelaine, Les Eyzies and Laugerie Basse, and others forming the Magdalenien group bring the long Quaternary period to an end according to many French geologists, though nearly all the animals now living were then existing or are but slightly modified descendants of Quaternary species. The Machairodus, Ursus speleus, Hyæna spelæa, and Felis spelæa, Rhinoceros tichorhinus, Elephas primigenius, and Megaceros hibernicus have become in succession extinct; the reindeer, musk sheep, and glutton, &c., have migrated towards the north; the saiga antelope has reached the east, and the hippopotamus, hyaena, &c., have gone south. Some of them, as will be seen later, seem to have disappeared in historic times, but whether this be so or not, we may be very sure that certain species lived on into the Neolithic age, if not into that of bronze. Most of them have been destroyed, like the American bison of to-day, by the hands of improvident man; he increased in numbers as a more genial climate than that of the early Quaternary period prevailed, and many of the later surviving animals fled before him or were killed off. It is remarkable that some of the French caves have furnished evidence of these altering conditions; the researches of Dr. M. J. Parrot show that some of the caves and rockshelters of the Valley of the Vezere, Dordogne, cannot be classed with any of the divisions of M. de Mortillet.² In these a series commencing with similar flint implements to those of Le Moustier, a stage appears to be reached later than that of the reindeer period, which is characterised by much more highly finished lance and arrow heads, and saws, with weapons and tools of bone.

We can hardly expect to find many instances in which caverns and rockshelters have been continuously occupied by man from the early Palæolithic period with its changing faunas, and the early Neolithic epoch which preceded the time when polished stones began to be used, the fauna of which is necessarily but little known, as such relics are not generally preserved at or near the surface. There are, however, some caves in the

¹ "Précis de Paléontologie Humaine."

² "Revue d'Anthropologie," t. iii.

Pyrenees which have been inhabited by successive peoples, and which appear to show a continuity between the two stone periods. Among these is the cave of Gourdan, Pyrenees, described by M. Piette. The rockshelter of Duruthy, near Sorde, Bas Pyrenees, explored by MM. Lartet and Chapelain-Duparc,¹ who give evidence of the former existence of a human race associated in Périgord with the mammoth, the cave-tiger, and the reindeer, first in the age of triangular bone arrow-heads (Cro-Magnon age), then in that characterised by barbed bone arrow-heads and representations of animals (age of La Madeleine, &c.), which, as M. Joly says, "after manifesting itself in the fully artistic phase at the bottom of the cave at Sorde, is found again towards the upper part of the same cave, with flint weapons, which from their finished form and rudimentary polish might almost be classed in the age of polished stone and rude pottery." Human bones were discovered in both the distinct strata, though in another bed they were intermixed, thus showing a continuous human history into a stage more recent than the Magdalenien epoch.

The cave of Mas d'Azil (Ariège) affords the like evidence, and in that of La Vache in the same valley, the age of polished stone and the reindeer period are equally represented. Nowhere, says M. d'Archiac, are the elements of a human chronology to be found in so complete a form as in this valley.²

The Cave des Fées (Yonne), explored by M. de Vilbraye, is also an example of a cavern wherein is found evidence of successive periods reaching down to a late date. In the lowest deposit were discovered the remains of the older fauna (cave bear and hyæna, &c.). In the middle layer those of the reindeer and other animals, and in the upper deposit (loess), bones of animals still living in the district (fox, badger, &c.). In the Trou du Sureau (Belgium) were found deposits, showing it had been occupied by man and other mammals at successive times up to a late period. Overlying the older remains were discovered the bones of reindeer, wild boar, goat, badger, fox, hare, &c., which have been assigned to the latest part of the reindeer period and with them flint implements formed from flakes, &c. Analogous facts have been noticed at the Cave of Pontil (Hérault), explored by M. Gervais; at Salleles-Cabardès by M. Filhol; in Poitou by MM. Brouillet and Meilles, &c. The Grotte du Placard (Charente), examined by M. de Maret, points in the same direction.³

¹ L. Lartet et C. Duparc, "Une sépulture des anciens troglodytes," Paris, 1874.

² "D'Archiac Faune Quaternaire."

³ "Le Musée Préhistorique," G. de Mortillet.

The cave at Mentone wherein the human skeleton was discovered, is said to have contained flint and bone implements of three different dates; that of Le Moustier, La Madelaine, and of the polished stone age with bones of the cave bear, hyæna, &c. (Joly).

Sufficient has been said to show that the stone implements of man evincing greater specialization in form and involving greater skill as time has passed, have accompanied the gradual extinction in succession of the great cave bear, rhinoceros, mammoth, urus, bison, &c., and in the probably slow migration of the hippopotamus, hyæna, reindeer, &c. At the same time, it should be borne in mind that the chronological sequence based on the remains of animals found in caves and rockshelters is not entirely satisfactory, for as Professor Boyd Dawkins says, "The hunters in each district would live on whatever animals they could catch, and the abundance of reindeer in one cave as compared with that of horses or cave bears in another implies merely a local variation in the fauna," and both he and M. de Mortillet believe that no classification based only on the mammalia is possible. As the former says an Esquimaux camping ground is in one spot covered by the bones of walrus or seal, and in another with the remains of musk sheep and reindeer.

If the remains of the changing fauna which accompanied the recent geological changes involving minor alterations in the surface of the land in the chalk and other districts, could have been as well preserved as the contents of caves and rockshelters, we should have had further evidence of the gradual extinction in England of such of the Quaternary Mammalia as have passed away, and parallel with these changes the slow development of the stone weapons and tools of man into various forms more adapted to his increasing wants, than the few simple types which indicate the state of human art in the earliest stage of the Palæolithic period.

According to Steenstrup, remains of reindeer have been found in the kitchen middens of Denmark associated with *cervus elephas*, the wild goat, and wild boar, brown bear, wolf, fox, lynx, beaver, marten, otter, walrus, seal, the great auk (lately extinct), &c., and the dog which is believed by Steenstrup, to have been then domesticated. The long oval implements from the "middles," the form of which appears to have been evolved from a *late drift type*, correspond closely with some of the specimens discovered at East Dean, Cissbury, &c.; the axes, which are flat on one face, and convex and sometimes partly ground on the other, are of a peculiar character, and are far less advanced than the polished celts found in this and other countries. According to Warsaë, these refuse heaps represent the

beginning of the age of chipped stone in Denmark: other archaeologists assign them to the period of the earliest Dolmens.

The reindeer has been driven further north within the historic period; there is great probability that it had not entirely disappeared in Great Britain in the polished stone age; though rare and perhaps doubtful in England, its remains, according to Dr. J. A. Smith,¹ have been found more abundantly in Scotland. Prof. Boyd Dawkins says they have been discovered in peat near the Thames, at Erith, with the beaver, Celtic shorthorn, goat and horse at the bottom of the deposit and also under similar conditions in the excavations for the Victoria Docks² and along with the moose or true elk, Celtic shorthorn, &c., at Walthamstow.³ Among other places in Scotland, the reindeer is said to have been met with in the refuse heaps of Caithness. Prof. Boyd Dawkins states that it is comparatively abundant in the peat bogs and marls of Ireland. MM. Roujon and Julien found in peat deposits near Paris, which are believed to date from the reindeer age, flint implements and other objects which they consider to be of later date than the period of the mammoth but more ancient than that of polished stone.⁴ Caesar is said to have hunted the reindeer in Belgic Gaul.

The mammoth is believed by many writers to have survived in Europe to a latter date than is usually assigned to it. Prof. James Geikie ("Prehistoric Europe") has suggested the possibility of its having migrated with the reindeer and afterwards reappeared in Great Britain, and of its having existed to a still later date in Siberia where its complete carcasses have been found in frozen ground. The great pachyderm appears to have survived down to the period of the formation of peat and the later alterations of the coast line in this country, as two perfect heads of the animal were found in a peat bed, near Holyhead, and a peat stained molar was discovered in the submerged forest at Torbay (later forest bed deposit).

As we have mentioned its remains have been met with in rubble beds in Sussex, &c., associated with flint implements of probably much later date than the old river drift. Neither Lyell, Dr. Falconer, nor Mr. Pengelly seem to have doubted that the mammoth survived down to the period when the late extensions of the coast line of this country existed. M. Dupont also thought that it lived in Europe to a later period than is generally believed.

¹ "Proc. Soc. Antiq. Scot."

² "Early Man in Britain."

³ "Geol. Magazine," vi, 339.

⁴ J. Geikie, "Prehistoric Europe."

Remains of the great Irish elk have been discovered at the base of the peat bogs in Ireland, and they have also been found though more rarely in England and Scotland; the moose or true elk has also been met with in peat beds.

The urus (*Bos primigenius*) may very well have survived into the polished stone or Neolithic age and probably to the earliest metal period. Its remains have been found in many places which indicate such a survival; among them may be cited a pile dwelling in Barton Mere, near Bury St. Edmunds,¹ in connection with which its bones have been found. Mr. E. Willet is reported to have discovered them in one of the shafts at Cissbury.² Although much larger than our domestic oxen, it is believed to have been specifically undistinguishable from the ox of to-day (*Bos taurus*). Lartet and Christy, and others, state that the urus was hunted by the Emperor Charles the Great in the central forest of Germany, while some writers have asserted that it lived there until the sixteenth century. Darwin considered the Chillingham cattle as its half tamed descendants, others have suggested that the large Caledonian ox is derived from it. The later ox (*Bos longifrons*) survives in our domestic breeds.

The auroch or bison appears to have lived into historic times in Europe, and a few survivors are believed to have recently existed if they do not still live in the Caucasus. It is known that herds of bison are preserved in the forests of Lithuania by the order of the Czar.

There are no indications that the fauna which accompanied man passed through such a vast period as is comprised in the Quaternary without undergoing some modifications, or that the few species which have become extinct were swept out of existence by some cataclysmic disaster, which included in its action Palaeolithic man, and spared the 31 species of mammalia which Prof. Boyd Dawkins says survived into the Neolithic epoch out of the 48 which lived in the Quaternary age, the remaining 17 being accounted for by the migration of 12 and the extinction of 5 only.

Modifications, extinctions, and migrations have occurred from the earliest geological times, but these changes have taken place slowly, and so it was in the Quaternary period, the species which died out disappeared gradually and in succession. The same thing happened in regard to the migration of the reindeer and other animals, they gradually retreated to latitudes more suited to their existence as the climatic and other conditions

¹ Boyd Dawkins, *op. cit.*

² It is said the Urus still inhabited the Hercynian forest and the woods of the Vosges, &c., in the time of Cesar (July).

changed, from those of a temperate pre-glacial period to the glacial epoch with its probably long continued inter-glacial and semi-glacial episodes, of which the fluvio-glacial character of the highest river drifts affords evidence, until slowly the more equable climate of the present day succeeded.

The forests and woodlands which covered so much of the British Isles at the dawn of the historic epoch, contained the survivals of the mammals of the Quaternary period, and among them may have existed the urus, and perhaps in Scotland a few reindeer, of modified species.

The facts, although far from fully gathered together in this paper, show that man was living in England and North West Europe in company with the quaternary mammalia in unbroken continuity, and that he was present throughout all those changes, which mark the extension of the quaternary into the historic period. There appears to be no adequate reason for separating the stone age of human art into two periods, but as I have endeavoured to show when the discoveries in river drifts of different levels which are taken to indicate different periods, are considered, and when the contents of caves and rockshelters, peat beds, &c., are studied as a whole, they afford sufficient evidence of human progress in the art of working flint from the remote period when the broken pebbles and rudely chipped nodules which have been found by Mr. B. Harrison and others upon the high ground or plateaux of Kent and elsewhere which perhaps indicate the lowest level of human art, to the deposits of the oldest river drift of existing valleys, where the few simple forms of the flint implements made from nodules and pebbles showing but little specialization, but, nevertheless, marking an advance in skill, are succeeded by river drift implements formed from neatly made flakes, corresponding in advance with the like objects found in the caves of Perigord, &c. As already mentioned the discovery of manipulating flint so as to produce long and short neat flakes at will, which could only be done by the methods now employed by the gun flint maker, marks a most important advance, since the weapons formed thereby were much more effective and the tools admitted of greater variation and differentiation as the wants of man developed. It is remarkable, too, how many of the chipped stone spear heads of certain savage races correspond with the old ones, and how their stone knives still exhibit the same curved form as is found abundantly among the drift specimens; to show this I exhibit a sketch of a curved knife of glass obtained from a tribe of natives of Australia, and now in General Pitt Rivers' Ethnographical Museum at Oxford, and a number of like specimens from the drift.

With regard to the implements hitherto classed as of the

surface period or Neolithic. Sir J. Evans says, "It is almost demonstrable that some of the chipped celts which have hitherto been classed as Neolithic must be among the earliest of the Neolithic implements," and "must in all probability date back to a very distant period." It is to these forms which appear to be of transition age, that I would apply the term Mesolithic.

In conclusion I should like to draw attention to the unsuitability and indefiniteness of meaning of the terms Paleolithic and Neolithic into which the stone age is divided in England—in the light of recent investigations and discoveries—the word Neolithic in its present acceptance is particularly misleading and uncertain in its application; it was at first applied to the age of polished stone, but was afterwards used to denote the period when the few species of mammalia before alluded to had become extinct, and the reindeer and other animals had migrated finally from this country, and it has been generally adopted as referring to stone implements found at or near the surface of the land when the sheep had been imported and other animals had been domesticated. As a fact, however, we do not know whether some lingering survivors of the former were not living in Great Britain far into the latter part of the Stone age, nor can we apply the term to flint implements which are found associated with geological accumulations formed at a latter period than the old river gravels, when we may fairly assume that the zoological changes referred to had not been entirely completed. It certainly is not applicable when the forms of the stone implements intermediate between the late Paleolithic and those of the latest stage of the age of stone are studied, and the corresponding advance in art or the progress of man is detected.

At present some flint implements, which from their form would be ranged under one of the later Paleolithic groups by M. de Mortillet and the French geologists, would be included in the second division, or Neolithic, in England. A careful study of the forms of stone implements, the mode of chipping and general skill they evince is as necessary for a proper classification as the bones found associated with them; the term Mesolithic appears to be stable for those objects in suitcase which neither belong to the drift period nor to that of polished stone.

Then in regard to the rude specimens found on the chalk plateau by Mr. B. Harrison, &c., in recent years under conditions which clearly indicate that they are older than the usual valley drift implements; the line of demarcation is sufficiently clear to form them into a distinct group.

I venture to suggest the following four divisions of the Stone age as being more suitable in the light of recent knowledge:—

1. Eolithic ; Roughly hewn pebbles and nodules and naturally broken stones, showing work with thick ochreous patina, found on the plateau of the chalk and other districts in beds unconnected with the present valley drainage.
2. Palaeolithic ; Implements from the higher river drift of the present valleys and such as from their form are of the same age, but are found in the oldest breccia deposit of some limestone caves—these implements are made from nodules and were generally from their form, &c., used in the hand without haft, or are coarsely made axes, &c.
3. Mesolithic ; Implements which from their form, and in many cases from the character of the deposit in which they are found, appear to be of intermediate age between the Palaeolithic and Neolithic, or polished stone periods. The implements are of flat pear shape or of more decided axe form—no implement with unworked butts—implements made from flakes struck off nodules taken direct from the chalk.
4. Neolithic ; Implements of polished stone or delicately worked like the specimens from Danish and other tumuli.—Dolmens, &c.

I would again refer to the flint implements found associated with later geological accumulations, or in other positions which indicate a higher antiquity than that usually assigned to the Neolithic period. The implements found in valley deposits at East Dean and in other parts of Sussex or Kent, or embedded in chalk rubble, head, or old detrital accumulations, but particularly in the matter formed in many dry chalk valleys, as affording evidence of a continuity of Man's existence, connecting the episodes of human history between the later stages of the Quaternary period and that of polished stone.

The occurrence of implements of Palaeolithic type, at East Dean and in other places to which allusion has been made, may be explained when taken in conjunction with those of Mesolithic form, by the suggestion that the makers of the old forms were gradually attaining a higher state of progress, and so, while retaining in part these old types, were gradually adopting forms more suited to them ; or we may assume that the Palaeolithic folk living in some of the valleys of the South Downs became intermixed and absorbed by tribes more advanced in art.

However we may explain it, we are met by the fact that a large number of workers in flint lived in and about the valley of East Dean, drawn there probably because the material was accessible without mining, and probably for a long period. The enormous number of chips and worked fragments of flint

scattered over the fields indicates that, whatever may be the history of the implements of drift type; a great flint industry was carried on there, and all kinds of flint implements were fabricated, and it is probable that, at any rate, in its later stages they were distributed by barter with other and, perhaps, distant tribes.

During the vast period involved in the changing fauna and in human history associated with later geological changes, there was ample time for many races or hordes of men to follow each other in succession into this country, until they were arrested by the old barrier—the sea to the westward. There are isolated remnants of old races in Europe, who were once distributed over the greater part of the continent. While many of their ancestors have been absorbed by advancing tribes, they have retained their racial characteristics, and not been fully incorporated with the various peoples which have issued from the Asiatic continent; and they have to some extent been left behind too in culture.

The Neolithic stage of industry remained in Denmark where there is no evidence of a Palaeolithic period of human art, long after bronze had been introduced from the east into Southern and Central Europe, and when the bronze stage of progress did reach the western confines of Europe, the art of working that metal had reached a high state of perfection.

May not the like cause, that of geographical position, have operated at the later part of the Palaeolithic period in England and the Palaeolithic workers who have left us some of their old forms at East Dean, &c., have survived here, until they became absorbed, and their implements improved, by invading races who had attained a higher level of progress.

DISCUSSION.

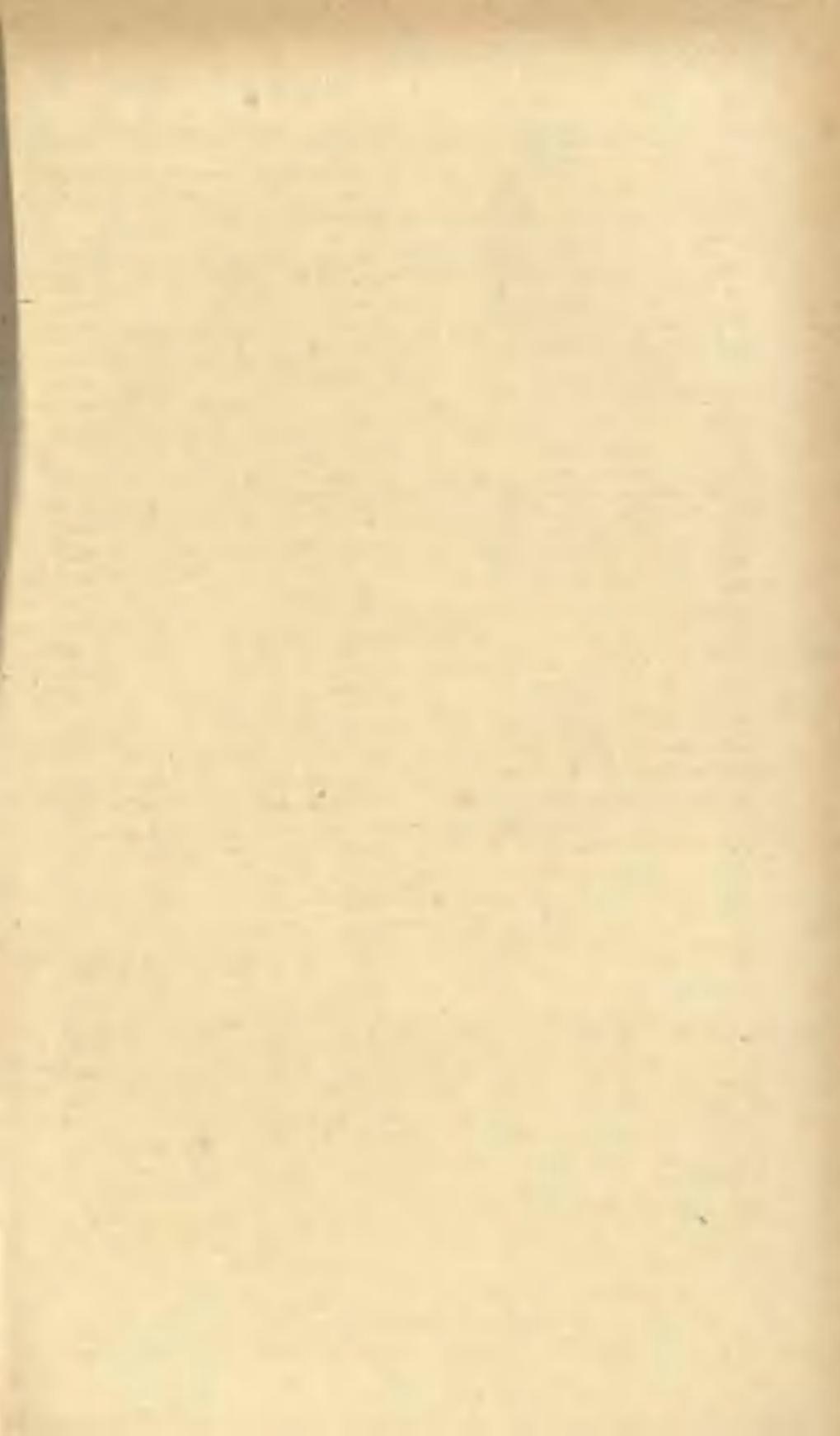
Prof. RUPERT JONES said that the thanks of the Institute were due to Mr. Brown, for his careful and instructive compilation of what is known about flint implements and the geological proofs of their age, and for his excellent suggestions as to the probable method of hafting some of these tools or weapons. The speaker had always thought that small flakes, more or less dressed and worked, were abundant in palaeolithic, as in neolithic gravels, but had been often overlooked, and that the so-called palaeoliths were not made only in the earlier period, but that similar forms occurred with neoliths, because not only had the fashion here and there continued, but some were rough beginnings for further manufacture. The occurrence of different kinds of worked flints at Cissbury, and the succession of forms met with in some caves supported the view that different tribes in separate localities would sometimes keep their own fashions, occasionally improve them, and probably would be

succeeded by other tribes ; and the same wants, similar materials to deal with, and the exercise of the same faculties, would lead in later times to the reproduction of fashions of former periods.

Dr. TYLOR remarked that the distinction between "Palmolithic" and "Neolithic" constituted a step of the utmost importance in the early history of man, the value of which was not lessened by the argument derived from such evidence as that of Cissbury as to the probable continuity of these two periods, in which direction Mr. Allen Brown's paper had brought together much of the most prominent evidence. He inquired as to the number of cases in which the Author was prepared to show early pointed flakes notched so as partially to develop a tang approaching neolithic forms of spear or arrow heads, as the weight of such evidence must depend on repetitions excluding accident. It would be of great interest to produce further evidence of the kind mentioned by Mr. Brown, as to marks of grinding done as if to re-edge chipped implements, and constituting a step towards the ground stone age. But neither in this way, nor as to traces of hafting, ought any but conclusive proof to be received. Dr. Tylor concluded by mentioning the Tasmanians as showing by the absence of hafting of their stone implements, that this art must by no means be taken for granted in the Palmolithic period.

The AUTHOR, in reply, said he was pleased to find from the remarks of the President and the other speakers that his deductions as to the continuity of the two stone periods in this country had not been opposed. In reference to the large flint double axes of the older and later ages exhibited, he pointed out that the one from the Thames Valley drift had three distinctly chipped depressions (two at the top and one beneath) for the reception of the withe, and that this mode of hafting (as well as the axe formed by inserting a stone in a club) was continued through Neolithic times to the present day among savage races. This was shown by a specimen now in the Ashmolean Museum, of which a sketch was exhibited. It was discovered with a withe doubly coiled around it. With regard to the spear head from East Dean, with depressions to secure it to the shaft, it was one of many similarly formed spear points which had been discovered, and was probably of transition age. Alluding to Dr. H. Woodward's remarks, the Author said he had entered in his paper somewhat fully into the gradual extinction and retreat of some of the quaternary mammalia during the period when some of the implements from East Dean, &c., were in use, because such evidence, where it could be obtained, was a reliable test of age. He then drew attention to his various exhibits, as follows :—

1. A collection of flint implements from East Dean, Sussex, &c., of Palmolithic, Mesolithic, and Neolithic types ; with those of Palmolithic type are placed drift implements from



Palæolithic Series.

1



2

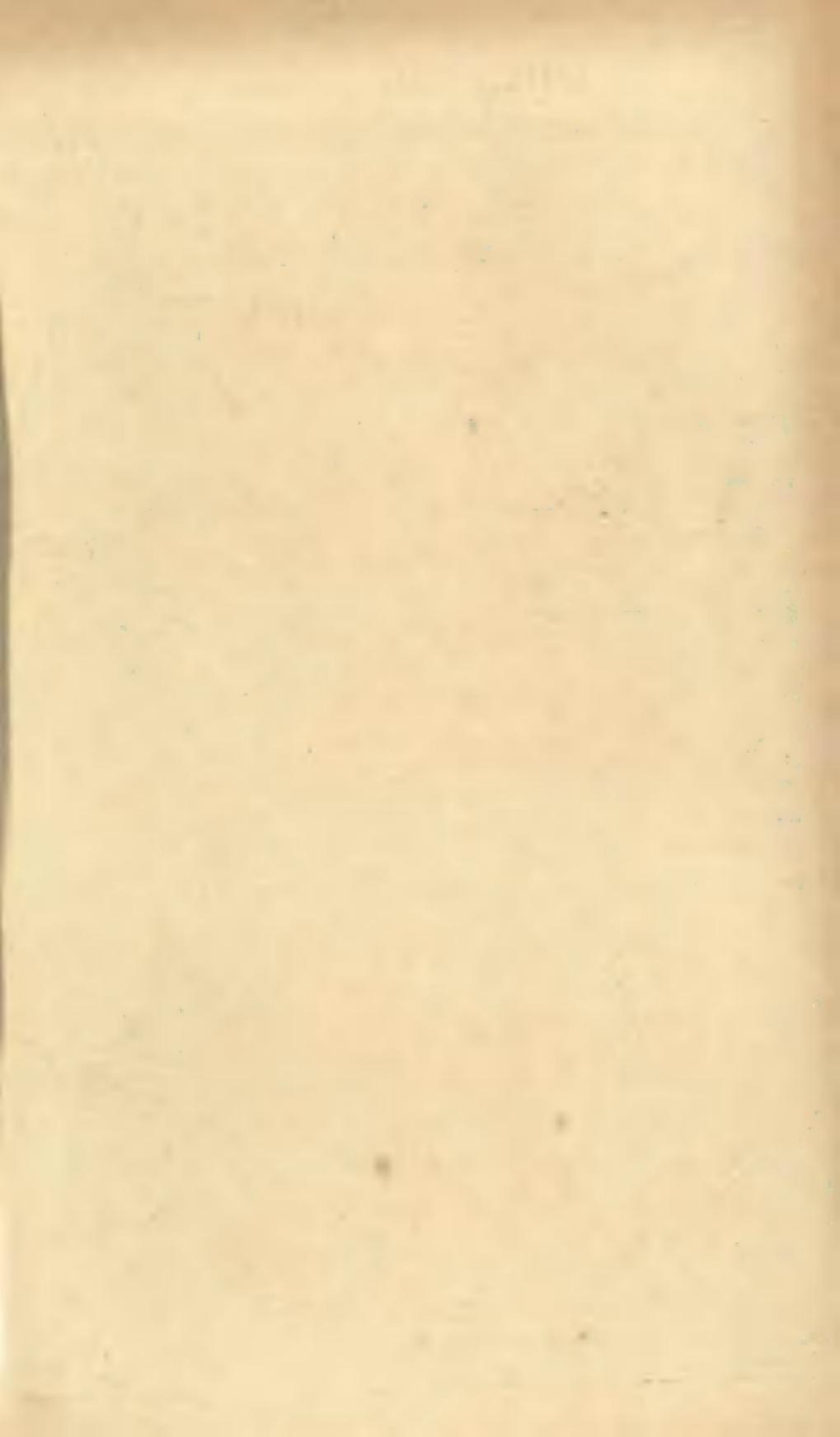


3



4





Palæolithic Series.



the Thames Valley of the same forms, to show their continuity into the succeeding stage.

2. Flint implement of the oldest period re-chipped at a later Palæolithic time, found associated with the other implement from East Dean (Mr. Hilton's Coll.).
 3. Implements showing the origin of the Neolithic "humped" form in the Palæolithic period.
 4. A series of flint implements of the Eolithic period (Plateau), Palæolithic (drift in the present valleys), Mesolithic (transition), and Neolithic periods, showing the evolution of the axe-head or celt from the simply chipped pebble or nodule of the earliest epoch to the first axe blades of the Age of Metal.
 5. A series of large double-edged axes from the Thames Valley drift; also a very large one from the brick earth at Iver, Middlesex (nearly nine inches long), of probably transition age with others of the Neolithic period; one drift specimen has worked depressions for the reception of the withe, also large axe implements slanting at the butt and showing the probable mode of hafting.
 6. A series of Palæolithic and other flint implements showing the evolution of two forms of knife, the long flakes, straight with slanting point of later Palæolithic age, and the other curved and recurved, being evolved from the old drift nodular formed implements curved at the apex, or from simply a nodule pointed (combined weapons and tools the *coup de poing* of Mortillet), also sketch of native Australian curved knife of glass (Pitt Rivers' Museum, Oxford).
 7. A series showing in like manner the continuity and development of the spear head from the earliest form, the trimmed nodule, thence to the neat spear heads formed from long flakes (some with rudimentary tangs) to the more perfect specimens of Neolithic age.
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DESCRIPTION OF THE PLATES.

Palæolithic Series—Plates I and II.

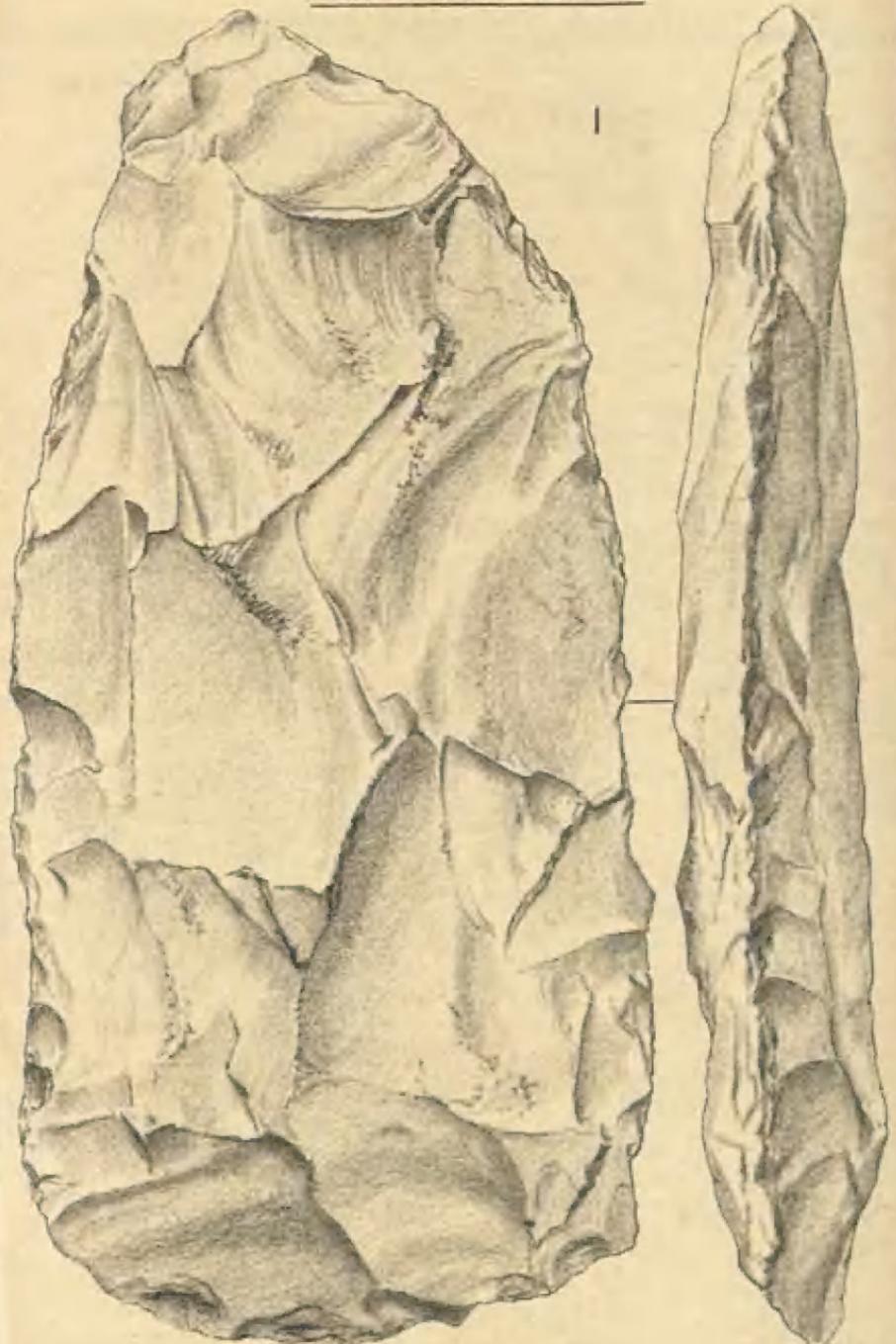
- Fig. 1.—Flint implement with thick cumbrous butt—whitened surface—(formerly in Mr. R. Hilton's collection). { Found at or near the Surface.
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Excav. near West Dean, Sussex (Cuckmore Valley).

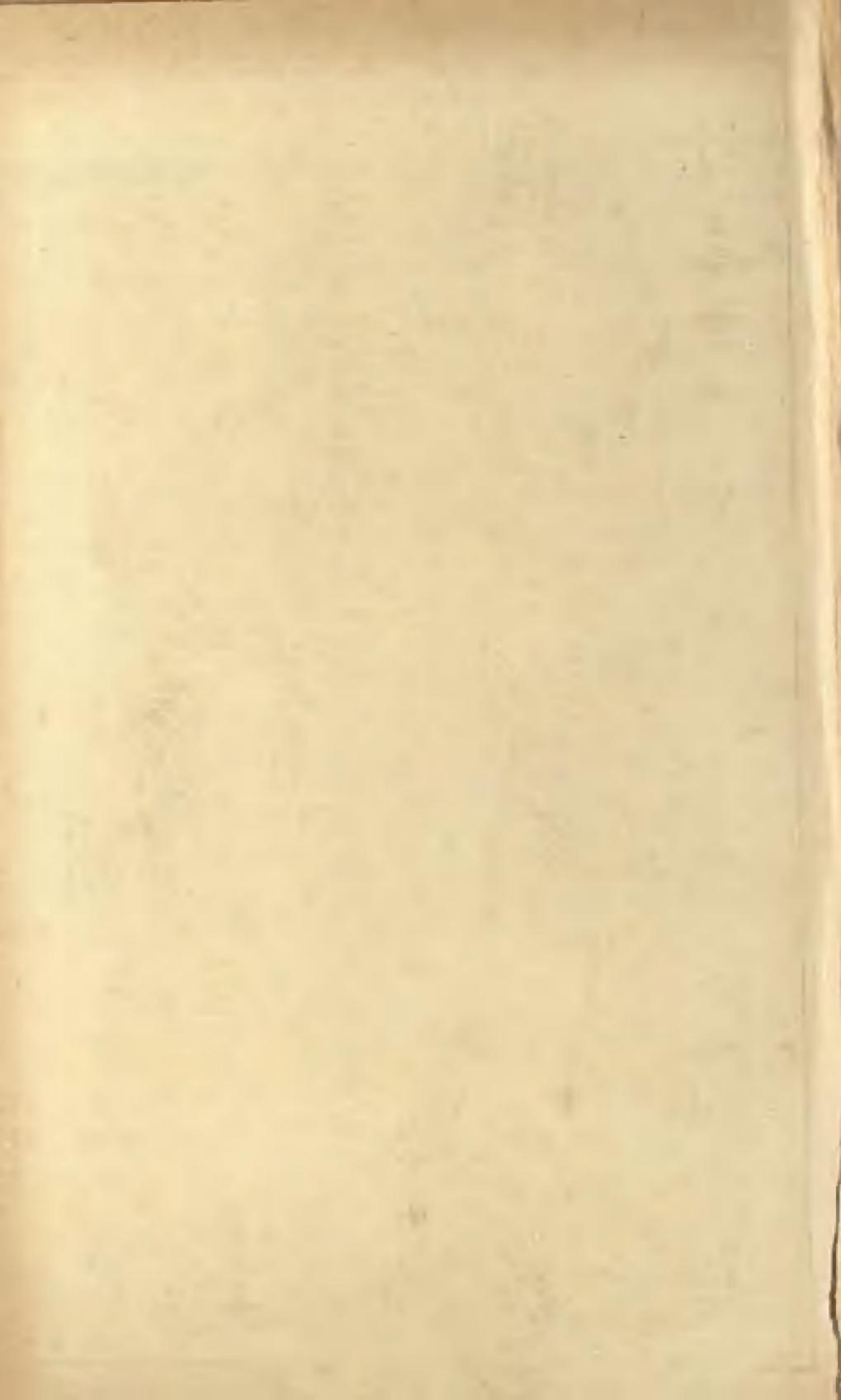
Fig. 2.—Flint implement with white patina.	{ Found at or near the Surface. — East Dean.
Fig. 3.—Small triangular flint implement with white patina.	{ Found at or near the Surface. — Friston, Sussex.
Fig. 4.—Flint implement of very ancient date—re-chipped in later Palaeolithic times—the whole surface is deeply ochreous; the more recent work has a white patina (formerly in Mr. R. Hilton's collection).	{ Found at or near the Surface. — East Dean.
Fig. 5.—Flint implement with patina; rounded crust of the nodule at the butt.	{ Found at or near the Surface. — East Dean.
Fig. 6.—Flint implement with white patina.	{ Found at or near the Surface. — East Dean.
Fig. 7.—Flint implement with white patina—grey surface (formerly in Mr. R. Hilton's collection).	{ Found at or near the Surface. — East Dean.
Fig. 8.—Flint implement with white patina.	{ Found at or near the Surface. — East Dean.

Mesolithic Series—Plates III and IV.

Fig. 1.—(Plate III.)—Large flint implement of axe form—bleached surface (formerly in Mr. R. Hilton's collection).	{ Found at or near the Surface. — East Dean, Sussex.
Fig. 2.—Flint spear or lance head chipped into a depression on each side of the butt—white patina.	{ Found near the Surface. — East Dean.
Fig. 3.—Flint double-bladed axe, very thick—white patina.	{ Found near the Surface. — East Dean.
Fig. 4.—Flint implement worked on both faces—bleached surface (formerly in Mr. R. Hilton's collection).	{ Found at or near the Surface. — Ringwood, near East Dean.
Fig. 5.—Long pointed flint implement—white patina (formerly in Mr. R. Hilton's collection).	{ Found at or near the Surface. — Excav. near West Dean (Cuckmore Valley).

Mesolithic Series.





Mesolithic Series.

2



3



4



5



EAST CENTRAL AFRICAN CUSTOMS. By JAMES MACDONALD.

THE following brief account of a few of the customs common among the tribes of East Central Africa, in the region of Lake Nyassa, have been gathered from many sources, most of them having been revised and corrected by missionaries and others who have, during the past twelve years, been resident in the Lake region. I wish especially to mention my indebtedness to Dr. Elmslie, the late Dr. Kerr Bain, and the Rev. Duff Macdonald.

As early as 1586, Don Santos, writing of the natives of Eastern Africa, inclines to the belief that they once were acquainted with true religion, and that they had degenerated to such a degree that it, and all idea of a former civilisation, had been entirely lost. This opinion he based upon the existence among them of trial by ordeal, which he regarded as having its origin in Scripture, and that from this source they must have first obtained it. The worthy Portuguese, had he lived in our day, would hardly have attributed customs, dating perhaps thousands of years before the Exodus, to the Mosaic legislation. One fact he does record which is of deep interest, if his account can be fully relied upon, and that is, that near Tete on the Zambezi, men and women were confined in regular pens like cattle, and slaughtered for food as required. These were prisoners taken in war, and who could not, there being a large number, be "used up at once."

Of all Central African customs trial by ordeal, which is universal, is that which is most revolting to an European brought for the first time into contact with savage life. When a man is accused of any crime, as theft, arson, murder, witchcraft, or the like, evidence is brought against him in the way common throughout the whole continent. This, however, is never final. The accuser's witnesses swear to anything required of them without the slightest compunction of conscience, and as the prosecutor must produce his evidence first, the defendant's witnesses are ready to swear, and do swear, the opposite of all that has been said. Trial is invariably in open court, and nothing said by the witnesses for the prosecution can be concealed from those that are to follow. There are no affidavits, thus making contradiction at once simple and safe. If rebutting evidence were allowed, the most paltry trial would be interminable. For a witness to be called a liar is, in such a case, a compliment. It proves that his evidence told, and that he, by inference, is a very clever fellow. If the same man were accused of bewitching he

would regard it as a foul libel and demand the poison bowl without an hour's delay.

To remedy the defects of trial in court, that by ordeal is adopted in all kinds of causes, both civil and criminal. As the case proceeds before the Council, the accused at intervals demands the Mwai, and this demand his friends, if they believe him innocent, persistently press. The accuser resists the demand as unnecessary, knowing that should the culprit, even if caught red-handed, recover, he will be placed in a difficult position. He will in that case have no claim to compensation for or injury, and may in turn be successfully sued for wilfully seeking to destroy another man's reputation. The belief in the absolute certainty of trial by Mwai is universal, and the beginning and end of reasoning is thus:—“If he is guilty, he dies: if he does not die, should the stolen property be found on his person, he is not guilty; another put it there, or he was bewitched.”

The life of an African properly begins at puberty. Then he is no longer a child, and discards both the work and amusements of boyhood. There is no great difference between the customs in Central Africa, and those in the South as regards infancy and childhood.¹ The seclusion of the mother, purification by the magician, sacrifice to ancestral spirits, wearing of charms to ward off evil and to promote growth and strength, are all customs with which we are familiar among the better known tribes bordering on the Cape Colony. In the Lake region the rites of initiation into manhood do differ considerably, but as this is a subject which has not been very fully investigated what follows is in a measure tentative. The rite of circumcision is general, and though many observers trace this to Arab influence there seems no sufficient warrant for the assumption. Few, if any, Arab habits have been universally adopted, and why this one rather than others? At circumcision it is customary to isolate the neophytes and treat them generally as is done by Zulus and Kaffirs, the close of the ceremonies being marked by dancing, feasting, and riot. The young men have arms put into their hands and are harangued by the elders, bards, and magicians. They are now men and men's work is to be theirs. Herding, hoeing, reaping, and all domestic duties in which they assisted their mothers, they have no longer any concern with. War, hunting, and herding causes must now occupy their thoughts, for they are to take the place of the fathers, and on them will depend the defence of the tribe and the maintaining of its honour. They must defend their chief, avenge his wrongs, wage war at his word, and

¹ The Yao, Makololo, Makusas, Machingas, Angoni, and many other tribes observe substantially the same customs at birth and during childhood.

obey his commands if that should imply death ; " a man can die but once," with which philosophy they are launched into the new life of full manhood.

Young women are initiated into the mysteries,¹ as the ceremonies are called, by rites and ceremonies nearly akin to *Intongane* in the South, and are then taught, in actual fact and by experience, much that would be regarded as immoral and not to be named among western nations. The details of these ceremonies I have not been able to obtain and verify with that degree of accuracy that would justify publication, as it might tend to mislead and confuse. One thing is certain, that in the case of both young men and women, separating into pairs with persons of the opposite sex is deemed essential. If this were neglected in the case of girls after the establishment of the menstrual function they would die. There is a second ceremony when a woman is for the first time *encastrate*. Her friends gather and make preparations as for a marriage feast ; her head is shaved ; the matrons in attendance sing songs and give the neophyte much advice, finishing with a glorious revel at night.

Taking the people as the traveller meets with them, the first thing to be studied is village life and personal rights and liberties. From that we may conveniently advance to the study of tribal life and national institutions. When a Yao or Wanyasa leaves his home to form a new village he wishes to strengthen his position by every means at his command. This he can do in several different ways. Free men may be induced to join him and form the nucleus of the proposed settlement ; he may purchase slaves and many slave wives, or, if able, make a raid and capture slaves to do the work necessary during the initial stages. When the village is recognised by the chief it becomes subject to the general laws of the territory. There is the same Council presided over by the new headman ; the same intercourse between the headman and chief by special " messengers," that is to say, confidential advisers ; the same system of land distribution and tenure, with the yearly tribute, as in older settlements. Petty cases are tried by the headman, graver cases are reserved for the hearing of the Council. The head of a village may, under African law, kill his slave,² but only a fool would do so as he would simply impoverish himself by the value of his chattel in the open market. Besides, should a man kill a slave unjustly he himself would "wither away and lose his eyesight." Domestic slaves have a quasi right to any property they may accumulate while they remain with the master under whom

¹ Wanyasa—South end Lake Nyassa ceremonies. Boys do not pass through them, but Yao, Makua, and Angoni boys do.

² Yao, Anyasa, Awissa, &c.

they gather it, but if sold the property remains the master's. Most Africans like to see their slaves become rich: "Are they not," say they, "our own children." When the Fingoes left the Gcalekas, whose slaves they were, to come under British rule, they brought with them numerous droves of cattle which they were allowed to possess in the land of their captivity. A slave's wives and children belong to his master and may be sold at any time. A headman who is in debt¹ sells first his slaves, then his sisters, next his mother and finally his free wives, after which he resembles the proverbial highlander; there is nothing more of which he can be stripped.

Closely connected with personal rights and liberty is the law of inheritance.² A man's heir is his brother, the son of his mother, failing that, his sister's son; his own children are excluded. This, as will be easily understood, is to make perfectly sure, in a land where every married woman has a lover, that the heir has the family blood in his veins. The succession to the chieftainship is based on the same principle, which is curious, considering the terrible severity with which known cases of adultery, in the case of chiefs' wives, are punished. A man succeeds to his deceased relative's wives as well as to his property and rights; they are a part of the estate. And here it may be mentioned that wives are obtained by inheritance, by purchase as slaves, by presentation, or by raiding and theft. Generally one wife only is free. An infant a few days old may be bought and betrothed, or even an unborn child, conditionally of course. In the case of infant betrothal the suitor provides her with clothes, which is the token of his pledge.

At an African village the work is done chiefly by the women³; they hoe the fields, sow the seed, and reap the harvest. To them, too, falls all the labour of house-building, grinding corn, brewing beer, cooking, washing, and caring for almost all the material interests of the community. The men tend the cattle, hunt, go to war and, curiously enough, do all the sewing required on their own and the women's garments. Neater tailors than Africans it would be impossible to find anywhere. By means of an awl and tendons from animals of the chase, they can sew small squares of skin together so as almost to defy an expert to find a seam without looking at the reverse side, nor are they mean artists as regards cut and fit according to African notions. Whether they would satisfy those who wear only "tailor-made gowns," is a question which the ethnologist is not called upon to solve.

¹ Notably among the Yao.

² Yao, Malemya's people at Zomba, Machingas, and many others.

³ This is universal.

*Travel and public undertakings.*¹—The African cannot always remain at his own village, he may be called upon to undertake a journey on his own account, or at the behest of his chief, and in either case it is necessary to take precautions to ensure success. There are places in Africa where three men cannot be sent on a journey together for fear two of them may combine and sell the third. But that by the way. When a man has determined on a journey he must consult the oracle by means of divination. The methods most commonly employed are as follows:—The magician takes a quantity of flour and lets it fall in a steady stream on a flat stone placed at the head of the traveller's bed. If it forms a perfect cone as it falls the omen is good; if not there is an end of the matter at that time and by means of the flour cone. Sacrifice must now be offered to propitiate the offended spirits. When the cone is perfect it is covered by an inverted pot and left for the night. In the morning the pot is removed and the cone examined, if it is still whole and in the exact state in which it was left when covered there is nothing farther to be done beyond presenting a thank-offering of rice, flour, or fowl, to the ancestral spirits and set out on the journey. Should there be a falling of the cone, even a small slip down its side, it is a sign not to be disregarded, and the oracle, after propitiatory sacrifice, must once more be consulted. The flour cone is now abandoned. The magician takes a pot of beer which he pours out upon the ground. If it sinks in one spot the gods are propitious, but should it run along the ground their faces are averted in anger or grief.

Another common method of divination is by means of small stones, claws, teeth, bits of snake skin, and other odds and ends which the magician keeps in a calabash or gourd, and which are shaken to be thrown as is done with dice. He examines the position in which the contents fall, and as claws, teeth, or stones are to right or left he gives his responses, always with Delphic ambiguity. It is not necessary to have a magician present in order to consult the oracle, though this is desirable. The recognised diviners sell bits of prepared root which travellers carry. These, three in number, are in cases of difficulty placed upon the ground, two side by side, and the third across those lying parallel. The owner, after placing them in position, retires, and after an interval of some hours returns to examine them and learn the response. If they are in the position in which he left them the oracle is favourable; if not, the reverse.

But even after the responses have been favourable and the sacrifices and offerings made, the departure of the travellers may

¹ The tribes referred to are those occupying the shores of Lake Nyassa, the hills to the south, and the uplands towards the lakes to the north, but not the Angoni and hill men to the west.

be delayed. Should the leader, during the first day's march, hurt his toe against root or stump they must return and begin the process of divination *de novo*. A rabbit crossing the road they are following denotes the death of the leader should they persist in the enterprise. A certain species of snake found on the path bodes evil to the whole party. When fairly on the road they must observe certain time-honoured customs. They must not use salt; if they did, and their wives were not behaving in their absence, the salt would act as a corrosive poison of the most virulent kind. Few Africans would take this risk.

The magician is in requisition in connection with every detail of life. In a case of illness an offering of flour is made to the ancestors. This is placed by the patient's pillow,¹ where the spirits come to regale themselves with its essence. If there is no improvement the magician is called, who may simply direct the patient to change his residence for a time and then take his departure. At other times he practises the art of cupping by means of an inverted horn, in which case he professes to "extract" the disease, as is done in the South, in form of bug or beetle. Counter irritation by means of incisions, into which ashes and pounded roots are well rubbed, is termed "killing" the disease. A charm may be given which the patient must wear as a means of cure and as a talisman against evil.

By far the most common method of cure is "smelling out" the person bewitching the patient by means of sorcery, and this is done both in cases of protracted illness and when a person dies suddenly.² The magician may simply "mark" the person who is causing the disease, who at once goes with a present to the sick man and a fee to the magician. It is, however, much more common to find the wizard put to death as a sacrifice,³ and in this the custom differs from that observed in the South. There the culprit is always put to death as a criminal, and only after a tribal council has met and heard him "named" in the most formal manner. In Central Africa the magician has the power of summary condemnation, when execution may follow immediately. The custom of human sacrifice accounts for the difference where, on the whole, the customs are the same, and regulated by the same usages. Anyone may be accused of bewitching, and in the case of sudden death a traveller as readily as a resident. Dr. Elmslie, while travelling among the Angoni a year or two ago, came to a village where he halted for the night. He had three days of forest travel before he could reach the next settlement. The morning of his intended departure

¹ Yao as observed by Rev. Duff Macdonald.

² Angoni, Notes by Dr. Elmslie.

³ Rev. Duff Macdonald, Nyassa Region.

threatened ruin, and his men, as always happens in such circumstances, were determined not to move. Again and again he tried to get them together, but without success. When he was about to give the case up as hopeless, a wailing and howling was set up in one of the houses and taken up by the villagers in chorus. His men came flying to their loads, which they picked up and struck into the path adjuring him by all the gods they knew to follow instanter, as someone had died and they might be accused of bewitching. The doctor followed, nothing loth to get on the road so easily.

The magician, when answering questions, shakes his gourd and examines the claws, teeth, and pebbles it contains.¹ From these he receives his oracles, and according to their position his answers are satisfactory or the reverse, but generally shrewd advice if somewhat ambiguous. It is they who prepare war medicine and doctor soldiers for the field; they, too, prepare the poison bowl and administer it to those who are to be tried by that means. At births, deaths, and marriages they are in constant attendance, and while the chief derives his revenue largely from voluntary gifts, the magicians receive fees which are rigidly exacted.

An institution peculiar to Central Africa is the prophetess,² who combines with her prophetic functions the office of witch detective. As she is the most terrible character met with in village life, a detailed account of her office and method of procedure may be interesting. It is to the prophetess the gods or ancestral spirits make known their will. This they do by direct appearance and in dreams or visions. The prophetess, who is frequently the chief's free wife, dreams her dreams and then gives forth oracles at intervals, according to the exigencies of the case. These are generally delivered in a kind of hysterical frenzy. When she sees the gods face to face, which always happens at the dead hour of night, she begins by raving and screaming. This she continues till the whole village is astir and she herself utterly prostrated by her exertions. She then throws herself on the ground and remains in a state of catalepsy for some time, while the villagers gather round her, awe-stricken, waiting for her revelations. At last she speaks, and her words are accepted without question as the oracles of God. Has she not seen the ancestors face to face? Has she not heard their voice sending a message to their children? Is she not their friend, to whom they have shown favour? Must not all hear the words of those who have gone before?

After these revelations the prophetess may impose impossible

¹ Auyasa, Yau, Maanganga, Watasomba, &c.

² Walolo tribe and Lake Shirwa district generally.

tasks on men, and they will be attempted without question. She may order human sacrifices, and no one will deny her victims. Suppose she, for any reason, declares that a person must be offered in sacrifice to a mountain deity, for there are gods of the valleys and gods of the hills, deities of the rivers and of the forests, the victim is conducted to a spot indicated by her and bound hand and foot to a tree. If during the first night he is killed by beasts of prey, the gods have accepted the sacrifice and feast "on his fat," which is "as the smell of spices in their nostrils." Should the victim not be devoured, he is left to die of starvation or is thrown into lake or river with a sinker attached. "The slave was not worthy of the god's acceptance. He is worth nothing to anyone." Fowls and other animals killed in sacrifice are not burned; they are simply left near the "prayer tree," and when devoured during the night the sacrifice is accepted. Among the tribes farther south, animals sacrificed are cooked and eaten with the exception of the sacred portions, which are burned with fire.

As a detective of wizards and witches, the prophetess is in constant demand. When travelling on official duty in this capacity, she goes accompanied by a strong guard, and when she orders a meeting of a clan or tribe, attendance is compulsory on pain of confessed guilt. When all are assembled, our friend, who is clad with a scanty loin-cloth of leopard skin, and literally covered from head to foot with rattles and fantasies, rushes about among the crowd. She shouts, and rants, and raves in the most frantic manner, after which, assuming a calm, judicial aspect, she goes from one to another touching each person's hand. As she touches the hand of the bewitcher she starts back with a loud shriek and yells, "This is he, the murderer, blood is in his hand." I am not certain if the accused has a right to demand the Mwai, but it appears this may be allowed. My impression is that the law does not require it, and that the prophetess' verdict is absolute and final. The condemned man is put to death, witchcraft being a capital crime in all parts of Africa. But the accuser is not content with simply discovering the culprit. She proves his guilt. This she does by "smelling out"—finding—the "horns" he used in the prosecution of the unlawful art. These are generally the horns of a small species of antelope and which are *par excellence* "witch's horns." The prophetess "smells out" the horns by going along the bank of a stream carrying a water vessel and an ordinary hoe. At intervals she lifts water from the stream which she pours upon the ground and then stoops to listen. She hears subterranean voices directing her to the wizard's hiding place, at which, when she arrives, she begins to dig with

her hoe, muttering incantations the while, and there she finds the horns deposited near the stream to poison the water drunk by the person to be bewitched. As they are dug from the ground, should anyone, not a magician, touch them, even accidentally, the result would be instant death.

Now how does the detective find the horns? By what devil's art does she hit upon the spot where they are concealed? The explanation is very simple. Wherever she is employed she must spend a night in the village before commencing operations. She does not retire to rest like the other villagers, but wanders about the live-long night listening to spirit voices. If she sees a poor wight outside his house after the usual hour for retiring, she brings that up against him next day as evidence of guilty intention, and that, either on his own account, or on account of his friend the wizard, he meant to steal away to dig up the horns. The dread of such dire consequences keeps the villagers within doors, leaving the sorceress the whole night to arrange for the tableau of the following day.

In addition to the horns, arms and pieces of human flesh may be dug up in suspicious places, and this is the carrion on which witches and wizards feed. Any one tasting a morsel of such food is himself thereby converted into a wizard. Witches and wizards have midnight feasts, so says the legend, at which they gorge themselves with human carrion. Hence it is that in many parts the dead are not buried till putrefaction sets in, and graves are watched a considerable period after interment. The detective may not be known as such to a wizard, and may pretend to follow the same art in order to gain his confidence. If then the wizard offers the detective human carrion no farther proof of guilt is needed. Whether such food is ever offered to these rogues it is difficult to say, as their word is accepted without question or enquiry.

Witches can cause milk to flow down through a straw from the roof of a house,¹ and by this means rob their neighbours of the milk of their goats and cows. When I read of this superstition for the first time it reminded me of an incident, connected with a similar Celtic superstition, which happened in Sutherlandshire about twelve years ago. In that region a superstition still lingers that witches can "steal the feet" of cows by walking through the fields while the dew is on the grass, dragging a rope made of cow hair after them. A Thurso mason well acquainted with north country superstitions, was employed in the district at the time referred to, and got a quantity of new milk daily from a crofter's wife. At the beginning of August she sent to say she could no longer let him have new milk, as that went to the

¹ This is pretty general in East Central and South Africa.

shooting lodge, but he could have milk from which the cream had been taken. The wily rogue sent her the following message : " Tell your mother I do not wish to be nasty, but I must have new milk, if not by fair means, then otherwise. I shall take it from the rafters of the house rather than want." Next morning the girl appeared with skimmed milk, thin and blue. Malcolm had meantime made his preparations. He had bored one of the roof couples and fixed a bladder filled with milk in the thatch so as to empty its contents through the hole when required. He then carefully plugged the hole. When he saw the quality of the milk sent, he asked the girl into the house that she might see what happened there. He next took an augur and bored the plug away, when down came a stream of rich milk and cream. After that he had but to ask what he required. No one dared refuse his most extravagant demands. His reputation as a wizard spread far and near over the country side, and still lingers there among the superstitions.

Wizards visit their victims while asleep, and " instil " a powerful poison, known only to themselves, into the ear.¹ For this there is no cure; the patient withers away, and dies " when all the flesh has melted off the bones." They bewitch fowls, cattle, crops, everything a man possesses. They make his wives barren and himself incapable of begetting children. They put enmity between him and his friends. In one word, there is no evil but they practise, and a great deal of the legislation of the country is designed to put down this crime, and punish those who are found guilty of it.

Murder and Serious Crimes.—Though witchcraft is the most serious crime in the eye of an African jurist of which a man can be guilty, there are other crimes which are regarded as capital offences. Of these murder, arson, adultery among women of the higher or ruling caste, and overt acts leading to war, are the most common. When a murderer is caught and proved guilty he is given over to the relatives of the person murdered,² who have power to dispose of him as they choose. It is contrary to custom to sell a murderer, as this would be equivalent to accepting payment for the relative lost, so he is put to death either by summary execution or by the slower process of torture according to the fancy of the deceased's family. It is customary also, among Yao and Wayisa, by way of propitiation to give up a slave or some relative of the criminal's to " go along with the one who was slain," and this seems to be invariably done when one is killed by accident, in which case the slayer may escape, the deputy taking as it were

¹ Manganga, Angoni, Yao, Walo.

² Nyasa region; also Tanganyika and among Bantu tribes generally.

his place. It is also customary in the case of a man murdered to bury one of his own slaves along with him, so that "he may not go alone." Among some Nyassa tribes the executioner is ceremonially unclean, and must bathe in running water.

Arson is a rare crime in Africa, and in the case of destruction of crop by bush fire kindled recklessly, the *lex talionis* seems to be applied universally in a rough and ready way. Field for field, fowl for fowl, with the loss of personal liberty where there is nothing to take. Slavery makes the Central African a much more sombre individual than the free men of the South. It adds an element of danger and uncertainty to human life, as that is lived in the African village, which colours every institution, and adds a new terror to every form of obligation.

Theft, as it is the most common, is one of the most serious crimes in Africa. A thief taken in the act may be killed with impunity. He is a wolf, and wolves are made to be destroyed. Thieves have charms by which they can send a man into such a sound slumber that they can enter his house with impunity and steal his goods. When one is formally accused of theft he has the right of public trial, but evidence is never regarded as conclusive. The magician, who here as on all public occasions, is master of ceremonies, may put a stick into his hand¹ and according as the stick moves towards his house or away from it he is guilty or innocent, this is but an older form of table turning. The accused may, if the evidence is overwhelming, plead guilty, or he may demand the Mwai. If guilty he trusts to his demand being resisted by the prosecutor; if innocent he believes that he will, without fail, vomit the poison. Theft of stock is always a capital crime,² and the victim is put to death by flogging, or a limb, as a hand at the wrist, is cut off, and he is then placed in the stocks and left to bleed to death. At times the bleeding stops and in that case he is simply left to die of starvation and the fatigue of sitting in a strained position.

In a land where chastity is almost unknown, and where, among many tribes, a premium is placed on young women who have proved themselves capable of child-bearing,³ the law regarding the relations of husband and wife is a curious medley. A marriage may be dissolved through either spouse speaking disrespectfully of the other's relations.⁴ The death of a wife's children is sufficient cause why she should be divorced, but she can retaliate and divorce her husband if he neglects to sew and mend her garments. If they are not pleased the one with the

¹ "Yao and dependent tribes," Rev. Duff Macdonald.

² Lake Nyassa, Shirwa, Zomba.

³ Tribes occupying regions south of Zambezi towards Swaziland.

⁴ Wayisa, and others south end of Lake Nyassa.

other, and this is mutual, what we would call incompatibility of temper, the courts will dissolve the marriage tie. Though a husband is not in common law responsible for a free wife's debts, it is no uncommon thing, after a separation, for him to present her with a male slave and vice versa.

When we turn from these trifling causes of separation to offences as adultery, we seem to enter another continent.¹ The wife who may be discarded if she neglects her hoeing, is hacked to pieces if caught in an intrigue, and the husband who is divorced if his wife can show a neglected rend in her petticoat, is promptly executed if found making love to a wife his neighbour has already determined to be rid of because some of her children have died of an attack of measles. One chief puts all male offenders to death on the ground that they might one day interfere with his own too numerous spouses, another has one of the offender's members cut off, cooked, and served for his dinner, which he is compelled to eat. After this he is, as often as not, put to death. A man who seduces a betrothed girl is treated in the same manner as if he carried on an intrigue with a married woman. Ordinary offences against morals among unmarried persons are regarded as venial and hardly to be visited with censure in some tribes, while among others their young women are closely guarded. A guilty wife may be forgiven by her husband, but in this case he cannot live with the faithless one till a third party has been with her.² This man's name is concealed from the husband, as he would always be jealous of him and might on small provocation kill him. If a guilty woman were to put salt in her husband's food, and he were to eat it, he would surely die, hence it is that many women have a habit of always asking a little girl to put in the salt. This is a wise precaution; any one may be caught halting and it might be awkward if a wife in the habit of salting her husband's porridge were to have, on occasion, to ask another to do it. Questions not easily answered might be asked.

When any man is accused of crime, or a Yao woman of adultery, the law admits examination by torture; in the latter case a stone is placed in a jar of boiling water, or even oil, and the suspected wife is ordered to fish it out with her arm bared. According to the injury inflicted her guilt or innocence is determined. If on examination of the scalded limb she is found guilty she must confess the name of her lover. Should she still persist in protesting her innocence a kind of skull-cracker is applied to extort a confession. This is composed of a long piece of wood partially split. Her head is inserted into

¹ Yao, Wemyisa, Makololo, Wemyanga, and generally lake regions.

² Tribes round Blantyre, south end Lake Nyassa.

the cleft and the free ends drawn towards each other by means of ropes. While this process goes on the chief sits, calmly smoking a pipe, and now and then suggesting a name to the poor tormented victim. She knows that any one mentioned by her will be put to death without farther trial, and it frequently happens that, with the fortitude of despair, she remains silent until the walls of the skull collapse and another life is quenched in darkness.

War.—In South Africa war resolves itself into a cattle hunt; in the Lake region of East Central Africa it is largely a slave hunt. A dangerous neighbour or rival can be effectually curbed by carrying away a large number of his subjects and sending them to market. This resolves war largely into raiding by means of a sudden and unexpected descent. The elaborate preparation of the South would warn the whole country, and while the doctor was engaged "charming" the army and distributing magic tokens to render the braves invulnerable, the enemy would have put "seven hills" between himself and the advance column. All the same, there is a close resemblance between the war usages of the South and what we find in Central Africa. There we find, especially among the Angoni, the Basuto habit of cutting out an enemy's heart and liver and eating them on the spot. We also find the habit of mutilation for the purpose of reducing the parts to ashes to be stirred into a broth or gruel, which must be "lapped" up with the hand and thrown into the mouth, but not eaten as ordinary food is taken, to give the soldiers courage, perseverance, fortitude, strategy, patience and wisdom. Should a brave leader retire to a mountain and die there unconquered, his spirit becomes, according to Yao tradition, the guardian of the rain clouds that gather there, and to him offerings and prayers are presented at the great national gatherings for rain. Mantanga inhabits Mangobi, the mountain the Yao remember as their home, and to him they pray and sacrifice for rain. He is liberal to his children and bestows great plenty. Chitowe on the other hand is surly and is associated with drought, famine, and leanness. He sometimes appears as an emaciated child or a young woman. These, and many others, are the spirits of warriors who perished centuries before the white man came to bring a new and terrible implement of destruction, and to introduce strange customs and stranger gods to people whose ways have been uniform since before the Flood.

Death, mourning, and worship.—Death is largely caused by wizards. The very introduction of death into the world has a suspicious look of witchcraft about it; in any case it was caused by a woman who taught two men to go to sleep. One day

while they slumbered she, more cruel than Jael, held the nostrils of one till his breath ceased and he died.¹ So it happens that "death and sleep are one word." When a man dies, if his death was caused by witchcraft, there is no safety for any one till the suspected person drinks the poison bowl. How such are discovered has been already indicated: the poor wretch who must drink the poison may be the man's most intimate friend, his nearest relative or perhaps his wife. There are even occasions when a large quantity of Mwai is prepared and numbers take it together. In this case wizards and witches are "cleaned out" wholesale. The practice is not uncommon on the Shire and the Zambezi.

Apart from the discovery of the culprit the dead are mourned for by a persistent beating of drums by night and by day,² and also by a continued howling kept up by relatives, and others of whom many may be hired for the occasion. The louder the drumming, the greater the grief. Relatives shave their heads, and in the case of a chief this is done by all his tribesmen. At the grave offerings are made, and the same is continued for a varying period at the votive pot placed on the site of the deceased's house.

At times, in the case of persons of social importance, as generals in the army and councillors, mourning is prolonged for many days before sepulture takes place, and in that case the body is encased in bark and placed in a suitable position, with a hole dug in the floor underneath to receive the decomposed and putrefied matter which exudes from it. The body is ultimately buried in the house, which is razed and the materials carried away that the spot may be levelled and a votive pot placed there. A slave is frequently killed and put in the same grave with his deceased master, that the latter may not have "to go alone." Enemies killed in war are not buried.

When sepulture is to take place in the usual place, and according to the general custom of the country, the body is wrapped in a mat, usually the person's bed, and a curious custom observed by Yao and Wayisa, who perform this office, is washing their hands as a ceremonial act. This is quite distinct from the idea of uncleanness after handling a dead body, and which requires bathing in running water before eating or associating with their fellow men. After the ceremonial act of washing is performed, the body is carried to the grave suspended along its length to a bamboo pole. When the grave is

¹ Yao tradition, told also by Wayisa.

² Macdonald, "Description of Funeral and Mourning Customs in Nyassa Regions." Mock funerals are most common among the Angoni.

dug it is carefully lined with palisades and green branches. At either end a forked stick is driven securely into the ground at the bottom of the grave, and the body suspended to the bamboo pole is placed in position, the ends of the bamboo resting on the forked sticks and preventing its touching the ground. A canopy of boughs is then placed over it to prevent the earth falling down on the body, and the grave is filled in as is usual. A slave may be killed to accompany the deceased, but not necessarily. The house occupied by him is burned and a votive pot placed on its site. Similar pots are also placed on the grave. When the chief of a tribe dies he is buried in his house, which is not taken down nor burned, and in this case the votive pot is placed outside the door under the verandah. The personal articles of the deceased, pipes, broken spear, walking sticks, ornaments, badges of office, charms, and wallet are placed in the grave, and this seems to be common among all, or almost all, African tribes. When mourning for the dead is concluded, which is after a varying period, there is feasting, drinking, revelry, and a second shaving, after which the dead is forgotten, or at all events seldom or never mentioned except as an ancestor to be worshipped, and then not by name but by relation, "my father," "my brother," "my chief," "my chief's son," &c.

A man worships the spirits of his own ancestors; a village, those of its departed heads; a tribe, those of its chiefs. The names of great warriors are kept long in remembrance, and we meet with many such whose history, exploits, and country are quite lost, but whose memory tradition preserves as great spirits who are high in rank above ordinary ancestral gods, and on whose will depends the destiny of peoples and the conditions of life as regards plenty or scarcity. This is common to almost all Bantu tribes. Worship takes the form of prayer, offering, and sacrifice. Reference has been made to the manner of human sacrifice, and its frequency among certain tribes is appalling. When the gods are offended, men must die; when hungry, cattle or fowls serve their turn; and when only to be propitiated, as in view of a favour desired, flour or corn is acceptable to them. At great national gatherings, as for rain, the magician, in the priestly character, conducts the sacrifice and the prayers, as also in cases of disaster and national mourning. In connection with rain-making the chief supplicates his own special god or guardian ancestor. A dance is held in his honour, and the chief throws up water to indicate that he prostrates himself and his people at the spirit's feet, who has the giving or withholding of that for which they pant and die. At times *Mpambe*—light-

ning—in the form of a deity of the clouds, is invoked for rain by Yao and Shirwa tribes, but *Mulunga*, the great spirit, or more properly great ancestor, is the deity to whom men look for help in times of distress and drought. This worship of Mulunga leads to a kind of tribal pantheism in the Lake region, for, after all, is not the Earth the mother of us all, Mulunga himself included. In the more private devotions of the people of the Nyassa region Mulunga does not appear, but a man may not only pray and sacrifice to his own ancestors, but also to the old inhabitants who occupied the country before his forefathers took possession of it. The people are gone, all dead, but their spirits live and dwell in the old place and see all that goes on in which they take an interest. There do not seem to be family and tribal distinctions as such among spirits; in any case they do not fight about territory as men do. No Milton has yet appeared in Central Africa to set the spirits by the ears.

The dead, however, may reappear in the form of animals, but only for pure mischief.¹ Widows are often held in bondage and terror by their lords returning in the guise of a serpent. This brute will enter the house, hide in the thatch, and look at its victim from between the rafters. It will coil itself by the fire and steal into the beds; it will glide over articles of food and explore the interior of cooking utensils. For this persistent persecution there is but one remedy, and that is to kill the serpent, when there is nothing left but "pure spirit," which cannot appear in material form any more.

A Yao spirit appearing in material form is different from a spirit's messenger, which also appears in animal guise. The latter may be a bird, a form which a spirit cannot assume, but which can be sent as a messenger to make known the spirit's will, somewhat after the manner of those sacred chickens which the stout old Roman threw over the side when they refused to eat. The African, too, can deal somewhat summarily with bird messages when his interests and inclination lie in that way, but this implies a degree of courage which is phenomenal.

Among the Angoni and the people dwelling on the western side of Lake Nyassa there is a common belief that demons hover about the dying and dead before burial, to snatch away their souls to join their own evil order. By the beating of drums and firing of guns such evil spirits are driven away, but a more certain method of avoiding their machinations is to have a mock funeral and so mislead and confound them. When it is determined to have such a funeral, an artificial body is manufactured

¹ Angoni, Manganga, Waomba, Anyasa, &c.

of any convenient substance, and treated exactly as is done with the bodies of the dead. This lay figure is carried a considerable distance to a grave, followed by a great crowd weeping and wailing as if their hearts would break. Drums are beaten, guns fired, and every species of noise made. Meantime the real corpse is interred near the dwelling as quietly and stealthily as possible. The evil spirits are effectually deceived; when the mourners retire there is nothing in the mock grave but a bundle of rushes, while the true grave they do not know and cannot find. Traces of this still linger in the South.

Man's origin.—As the African must account for the origin of death so, too, he has a theory regarding the first appearance of man on the earth. Both he and all other animals came out of a hole in the ground, after which Mulunga—the great ancestor—closed up the opening. The place is now desert, no man dwells there, and the spot is known to none. The gods refuse to reveal it. Whether this is that it may not be opened, and other creatures be allowed to escape from it, their philosophy does not very clearly explain, but what is very certain is, that monkeys were men at the time of their exit from the earth,¹ but having quarrelled with their friends went to "dwell in the bush." To vex and harass those whom they left they began to pick the seed from the ground after it was sown, and this habit having grown to be hereditary monkeys cannot grow corn, as they "could not leave their own seed in the ground," which is perhaps as good a definition of the difference between men and monkeys as any given by scientists.

Reference to monkeys reminds one of that wonderful procession seen by the Pasha, where each carried a torch to light him in his depredations among the corn-fields, a story which one man explains by referring it to Emin's defective eyesight, another to a possibility of monkeys being able to produce fire by friction. Without giving any opinion regarding the accuracy of the observer, a statement made to me by a South African native, a Pondonusi, may throw as much light upon it as all our science. At the time I paid little attention to it, and, indeed, it passed quite from my mind till I came across the Pasha's story in Mr. Stanley's book. It was, so far as I can recollect, in the following words—the connection in which it was told is of no importance—"The master is surprised. There are monkeys in the mountains," the gorges of the Drakensberg, "that go to the fires men leave in the bush and carry away burning sticks; they even go up the trees with them and then throw them down. I have not seen it myself, but I have heard say that when women leave

¹ This tradition Mr. Macdonald found common in the Shirwa and Nyassa regions.

a fire near the edge of the bush they come out to the grass openly—with burning pieces of wood and play with them, some say they carry them back to the fire to make them burn better." If this is a true and sober version of what is not uncommon, a little less science and a little more ordinary intercourse might have saved the eminent if erratic German a good deal of idle speculation. One can quite fancy monkeys playing with fire-brands found near the edge of the forest, carrying them off in their march to the corn fields, to cast them aside when the work of depredation began.

If man's origin can be satisfactorily accounted for, his destiny is shrouded in impenetrable gloom. All spirits live, nor can they be killed, but how employed or what country they inhabit is known to no one. It is true a man's ancestors watch over his life, and the chief's ancestors guard the honour of the tribe, but beyond this all is uncertainty and doubt.¹ A man's spirit is not at his grave though it may be met there, it is not at his old home, but still it sees the offerings placed in the votive pot. It does not inhabit his son's house though he cannot cut his nails or trim his hair without his father's eye being upon him, and should he fail to bury the clippings of his nails or to burn the produce of the barber's shears he may expect to be reminded of it in the most unpleasant manner; nor is it a man's own actions alone that come under the cognisance and censorship of his father's ghost; should his wife, while he is on a journey, anoint herself with the oil or fat in daily use, she will not only suffer herself but bring calamity upon her husband; should she dream during his absence she must offer a private gift for herself and the absent one. So far the wishes of spirits are known, but how they employ themselves in the spirit land, and what are the mutual relations between them has never been told. A chief remains such in virtue of his office, but as to the relations between rival chiefs and old enemies "the people who are here do not know; it never was known, for they never told."

In a paper which appeared in vol. xx, No. 2, I gave an account of the Kaffirs' theory of the origin of death. The same tradition, in a modified form, the Rev. D. Macdonald heard among the Yao in the Nyassa highlands, and records it as follows:—The chameleon was sent to the graves to say, "When people die they may return to their homes." He went off and was passing along the road. Afterwards the salamander was called to go to the graves and say, "When people die they must not return." The salamander ran and arrived quickly while the chameleon was still on the way, and said, "When people die they must

¹ The following customs are gleaned from notes and references by missionaries in the Nyassa and Tanganjika Lake regions; no particular tribes being named. The customs seem common.

not return." Next morning the chameleon appeared. He said, "When people die they may return." Those at the graves said, "No, the salamander came and he told us the truth." Then the chameleon went back to report at the village, and said, "The salamander was first, he gave the order, 'When people die they must not return.'" Those at the village said, "How silly. You were stupid, O chameleon, you should have made haste."

A comparison of this legend with the one referred to will show that the former is much more elaborate and has the appearance of being general rather than local, as there is no reference to "village" or "persons," but rather to spirits or powers, under the figure of "the never-dying Sudiwa," whatever that may be.

The same people account for the origin of the sun in this way:—Two men went out hunting and took shelter in a cave from a storm of rain. While in the cave one found a place where there was heat, and they began to search, and move the stones where the heat was felt. After they had made an opening they peered in and saw the sun. One exclaimed, "Look! look! come, let us run away." This he did, but the other continued to remove the stones, when the sun burst out and burned him that he died. As it left the cave it set the grass on fire and then rose up on high, where it has ever since remained.¹ The moon, on the other hand, was a fire which a great man kept in a pot. This his children were not allowed to touch. One day while he worked in his garden he slept, and remained there over night. The children opened the pot where there was light and brightness. The fire flew away and lighted on a hill-top. They climbed to get it down, but it flew up to the clouds and was lost for ever. It has since given light to all men. Stars are stones with which M'kwilima's children played and flew up to become fixed on high. The first star was a stone that hit and killed a child while at play. Wind was originated by a great man blowing to cool a favourite daughter who complained of the heat. Mwangalika made a fire and caused its smoke to become clouds to shade his people.

Turning from speculations regarding creation, life, and death, to the daily concerns of this world we meet with a number of very curious minor customs and institutions among the Yao and allied tribes. One of these is that of surety, or what we might call Godparent. Every girl has a surety, and when her hand is sought in marriage it is this official who is approached and not her parents. He makes the necessary arrangements and sees what provision is to be made for her and her children should she have any, and also, in the event of her being sent

¹ Yao myths and legends.

away without just cause, how she is to be supported and cared for. When a free wife, for this institution applies only to free women, is dismissed she returns to her surety, and he redresses her wrongs and makes such adjustments as the circumstances admit of.

In the ordinary conduct of affairs, domestic and public, women have no voice; everything is regulated by the men, who may be said to sit perpetually in council. A Yao woman asked if the child she is carrying is a boy or girl, frequently replies, "My child is of the sex that does not speak." The position of woman is practically that of a chattel. Women kneel when addressing men, and go off the public path into the grass or bush when they meet any of the opposite sex as a sign of subordination and subjection. Young girls do not take milk; if they did it would make them barren. Women, especially Makololo, wear a lip ring the size of a small table napkin ring in the lip, not suspended as earrings are, but inserted into the lip as the "eyes" through which "reef points" pass are inserted between the canvas of the sail and its "bolt-rope." It causes the lip to project an inch and a half in front of its natural position and at right angles to the teeth and gums. A small brass or lead ornament is suspended from the side of the nose, which is pierced for the purpose, as the lobe of the ear is for earrings. Some of the front teeth are knocked out as a beauty mark, and the arms, cheeks, breast, and shoulders are tattooed with strange and fantastic devices. Necklets of teeth, shells, or bits of wood are common, and brass wire is in great demand for bracelets and anklets. The dress consists of a loin cloth of skin, cotton, or bark. The latter is made by stripping a piece of bark from a tree and then beating it with an ebony hammer till soft and pliant. It is easily torn, and even when treated with the greatest care does not last long. On the Shire and round Lake Nyassa the people have hardly any stock except fowls and a few goats, and are thus precluded from having the comfortable sheep-skin garments so common among the Kaffirs. Domestic animals are precious in Central Africa, so when chickens are hatched the abandoned egg shells are collected and hung up in the house to protect the brood from hawks and accidents of all kinds.

Industries and art.—The principal industries among the tribes whose customs I am considering consist of pottery and working in iron.¹ They manufacture clay pots of beautiful design and burn them with considerable skill. There is a tradition linger-

¹ The Angoni own a tribe of inner Africa which they have reduced to the position of domestic slaves. They are the best smiths in the Lake region. Whence they came I do not know, but they were not natives of that region originally.

ing in odd corners that once upon a time their ancestors used hollow stones as pots before the art of pottery was discovered: If this is true, of which there is no adequate proof, however, it effectually disposes of Don Santos' idea that the East Central African had gradually degenerated from a higher civilisation, and points rather to a record of progress. And there seems to be beyond question steady if slow progress in their skill in working metal and fashioning implements of war and husbandry. There is no question that within a comparatively recent period they tilled the ground with wooden implements, for the memory of it lives in universal tradition among them. At no very remote date a Tubal-Cain appeared, and since his day the iron-headed hoe has found its way into the remotest hamlet, and the national ingenuity has found exercise in fashioning and ornamenting weapons of war. The improvements made in the manufacture of implements of husbandry and tools for the craftsman are insignificant compared with the advance in the manufacture of spear and battle-axe. The iron they smelt from its native ore by a primitive process of blast furnace, and then work and temper it much as was done by our country smiths two or three hundred years ago. I have seen spears of African manufacture, made by Baralong smiths, tempered so finely that it required a good Sheffield blade to turn their edge. This is, however, exceptional, and the vast majority of articles made are soft and the iron coarse in texture when broken. In woodwork their progress has been slower, and beyond polishing spear handles and the manufacture of musical instruments, pillows—a regular article of commerce—pipes, walking sticks, and mallets, not much is done; the manufacture of canoes, their greatest triumph, being always excepted.

The social usages among the people are complicated, and an accurate account of the details of domestic life is much more difficult to obtain than of village and tribal life. Reference has been made to the subordinate position of woman. Should a free Yao or Wakonda wife steal, her surety is responsible, and for the act she may be dismissed from her husband. A mistake in etiquette towards the chief is severely punished, and among the Waganda the offender may be slain on the spot. A man will hardly address another directly as "you," nor will he use a direct negative if he can avoid it. The expressions are "The master knows," etc., and for a negative, "I will see if that happens." Untruthfulness is a national characteristic, but sympathy, tenderness, and fidelity are not wanting and are at times strongly marked. In critical or dangerous circumstances a joke may restore good humour as if by magic.

Of minor superstitions the number is legion. Children wear

a charm round the waist; stakes are driven into the ground on the edge of the corn fields and bound with herbs to protect the crops. Anyone touching these will die on the spot. When mourning in the Nyassa region they hold capsicum to their nostrils to induce tears, and drink a particular medicine when on a predatory expedition. Some animals are sacred; others unclean. A few are worshipped or preserved because of their utility or some superstition regarding them. The common black and white crow occupies a peculiar position in this respect. Crows eat and destroy the growing crops, especially corn, but for this they have a valid excuse; it is this:—Once long ago a Yao chief was greatly perplexed and in sore straits. A crow came and gave him such information and advice as he required. The chief gave the crow a very large present of grain of which it dropped and lost many seeds on the way home. These seeds the crows are still looking for, and in their search pick up others in the fields. Poor crows!

The general conduct of village life in Central Africa bears a close resemblance to what we are so familiar with in the South, though this is greatly modified by the existence of slavery on the one hand, and the almost total absence of horned cattle in the Lake region. A pastoral people regulate their whole life with a view to the care and increase of their stock. Hunters or mere tillers of the ground, by a regard to the existence of animals of the chase and the fertility of the soil on the margin of swamps or along the banks of rivers. This again tells on domestic institutions, law courts, councils, parliaments, and the office of chief, hereditary or otherwise. For example—A man flies from an enemy, or because of a prosecution for witchcraft, and takes up his abode high up a mountain side. There he gathers round him a few friends and retainers, who either at his death or when the feud is ended descend to the plain and take up their abode with the tribal community. In after years the story of the flight and cave dwelling is told with such additions and embellishments as suggest themselves to the narrator, and so it happens that the descendants of the mountain men come to regard the original fugitive as an ancestral chief, more rarely a man god. His spirit is their guardian spirit; the mountain is his home. It is a holy place to be had in reverence, and the rain-cloud which gathers on its summit is the home of the lightning god. So do legends grow, and so, too, do families rise to importance and office among their fellow countrymen.

When the descendant of such a fugitive, or the son of an hereditary chief, but especially the former, is invested with office as chief of a tribe, he swears fealty by his ancestors.

He is then harangued by the councillors who were near his father's person, and next by what we may term the jurists of the tribe. He is himself regarded as in a sense divine. The first duty laid upon him is hospitality. The wayfarer with sore feet and fainting from fatigue must never be turned away from his door. His hand must not be always closed. When men high in rank visit him they are not to go home "with nothing that can be seen, like men returning from a desert." The next obligation laid upon him is "that he must not beat his own people too much," which literally means that he must not be too exacting in the matter of "presents" to replenish an exhausted exchequer. How he is to reconcile the duty of unlimited hospitality and the perpetual drain upon him in the matter of "what can be seen," with stringent economy and nominal taxation never enters an African's head. Both are virtues. The chief must practise all the virtues, and that is an end of the whole matter. When he has promised to practise all the virtues demanded of him, his temples are begirt with a garland, as among Yao, Wayasi, &c., and this, or a more simple substitute, he wears as his badge of office. When the garland is placed on his head, his father's high priest, or chief magician calls him by his official name, and the coronation is complete. This official name must not be the same as his father's and is generally a new name of his own choice, as is the case with the Lords of Session in Scotland. The chief's first official act is to appoint a chief magician or high priest, who is to be confidential Minister of State. The other officers who acted under his father may retain their places, but not necessarily.

The details of domestic life I have not been able to gather with any degree of accuracy, but it would be of interest to know the ceremonies at birth, when the Wayisa or Shirwa mother retires to the bush with two or three friends before the birth of the child, to return when it is about three days old; at marriages when the bridegroom goes to his wife's home rather than she to his; at dances and in connection with the ceremonies of initiation; at feasts of first fruits and when the seed is sown, but these are details which do not seem to have been observed with great accuracy, and indeed it is difficult to do so, for I can testify that one may live for years among Africans and remain ignorant of customs and ceremonial usages practised by his own servants and attendants. Any one who shows special curiosity regarding the details of life is never told the truth. There seems in that case to be a conspiracy to mislead or tell him only what is deemed good for him. I have heard, and written down, what was heartily laughed at by my half civilised attendants who were familiar with all the native customs. I

have seen elaborate ceremonies performed solely for the purpose of misleading me and baffling my curiosity. I once found a famous wizard in a neighbour's cattle fold "doctoring" for some plague which had broken out among the cattle. I asked if he was so-and-so. He answered, "No." I was not satisfied and took up his wallet which lay on the ground. He made no objection. I emptied it and examined its contents, and still he chatted pleasantly, though he knew that my handling his charms meant his returning to his home, a distance of forty miles, in order to "cleanse" his properties before he could complete his work. I was quite thrown off my guard and left, supposing him to be an ordinary traveller. I afterwards discovered that it was the man I thought, and whom I had long wished to meet. He successfully avoided my questioning, and often baffled my curiosity afterwards.

Only by comparing the statements of many persons or by actual observation, making sure a tableau is not arranged for one's special benefit, can one be certain that he is not imposed upon. Unfortunately many write down whatever they are told, and only revise it when there is no possibility of testing its accuracy. Like the cockney, who, in passing through the Sound of Mull, asked the late Dr. John MacLeod, of Morven, "What food do the *natives* on either side live upon?" and receiving the reply, "Potatoes and cuddies," transferred it to his journal, thence to reappear in an English newspaper in this form:—That "the inhabitants in parts of Argyleshire live principally on potatoes and donkey," utterly unconscious that the "cuddie" is a well-known local fish!

MARCH 22ND, 1892.

FRANCIS GALTON, Esq., F.R.S., *Vice-President, in the Chair.*

The Minutes of the last meeting were read and signed.

The election of DR. A. B. MEYER, Director of the Royal Ethnological Museum, Dresden, as an Honorary Member, and of FREDERICK TAYLOR, Esq., of New York, as an Ordinary Member was announced.

The following presents were announced, and thanks voted to the respective donors:—

FOR THE LIBRARY.

- From the AUTHOR.—The Peabody Museum of American Archaeology and Ethnology. By F. W. Putnam. 8vo. pp. 12.
- Della comparazione dei caratteri fisici dei delinquenti e dei non delinquenti. By Dott. Raffaello Zampa. 8vo. 1890. pp. 19.
- Crania Italica vetera. By Dott. Raffaello Zampa. 4to. 1891. pp. 79.
- Sulla Etnografia dell'Italia. By Dott. Raffaello Zampa. 4to. 1891. pp. 10.
- Breve nota di Etnografia Comparata. By Dott. Raffaello Zampa. 4to. 1891. pp. 4.
- Contribuzione alla Etnografia della Melanesia. By Dott. Raffaello Zampa. 4to. 1890. pp. 16.
- On the Modification of Organisms. By David Syme. 8vo. London, n.d. pp. viii, 164.
- From the PUBLISHERS.—Text-book of Psychology. By William James. 8vo. (Macmillan and Co.) London, 1892. pp. xiv, 480.
- Illegitimacy. By Albert Leffingwell, M.D. 8vo. (Swan Sonnenschein and Co.) London, 1892. pp. viii, 160. Maps and Diagrams.
- The Naturalist in La Plata. By W. H. Hudson. 8vo. (Chapman and Hall.) London, 1892. pp. viii, 388. Illustrations.
- From the DEPARTMENT OF MINES, NEW SOUTH WALES.—Memoirs of the Geological Survey. Paleontology. No. 8.
- From the ÉCOLE D'ANTHROPOLOGIE DE PARIS.—Revue Mensuelle. 1892. No. 3.
- From the EAST INDIA ASSOCIATION.—Journal. Vol. xxiv. No. 1.
- From the EDITOR.—Nature. Nos. 1167, 1168.
- Revue Scientifique. Tom. xl ix. Nos. 11, 12.
- Nouvelle Iconographie de la Salpétrière. 1892. No. 1.
- From the ROYAL ARCHAEOLOGICAL INSTITUTE.—The Archaeological Journal. No. 192.
- From the ROYAL UNITED SERVICE INSTITUTION.—Journal. No. 169.
- From the ANTHROPOLOGICAL SOCIETY OF WASHINGTON.—The American Anthropologist. Vol. v. No. 1.
- From the FOLK-LORE SOCIETY.—Folk-Lore. Vol. iii. No. 1.
- From the ROYAL AGRICULTURAL AND COMMERCIAL SOCIETY OF BRITISH GUIANA.—Timehri. Vol. v. No. 2.
- From the ROYAL SOCIETY.—Proceedings. No. 305.
- From the SOCIETY OF ARTS.—Journal. Nos. 2051, 2052.

Mr. FRANCIS GALTON laid upon the table a register of physical measurements of schoolboys made at frequent intervals by Dr. Almond, the Head master of Loretto School, Musselburgh.

Mr. GALTON said : An interesting register of physical measurements of schoolboys, taken at frequent intervals, is laid on the table. It was made by Dr. Almond, the head-master of Loretto School, Musselburgh, who is a staunch advocate of physical education as reacting on the moral and intellectual character. The register is of anthropological interest in many ways, upon which it is not my object now to dwell. I submit it to the Institute only for the purpose of placing the existence of the document on record, and of drawing attention to the zeal of its compiler.

Mr. J. THEODORE BENT read a paper on "The Archaeology of the Zimbabwe Ruins."

Mr. FRANCIS GALTON, Dr. J. EVANS, Mr. C. H. READ, Mr. A. L. LEWIS, Miss A. W. BUCKLAND, and Prof. W. H. FLOWER took part in the discussion, and the Author replied.

On the FINDS at the GREAT ZIMBABWE RUINS (with a view to Elucidating the ORIGIN of the RACE that BUILT THEM).

By J. THEODORE BENT.

[WITH PLATES V TO IX].

I PROPOSE this evening to discuss seriatim the finds that we made during our excavations at the Great Zimbabwe ruins, presupposing a knowledge of the construction of the buildings themselves, which can be gathered from an inspection of the model and the plans. I also propose to give my own opinion on the things in question arrived at after a careful consideration of the objects taken collectively, with a view to inviting discussion on a subject which is shrouded with such a veil of mystery.

Firstly, let us take the birds perched on long soapstone pedestals, which decorated the outer wall of the semicircular temple on the hill ; these birds are all conventional in design, and, though different in execution, would appear to have all been intended to represent the same bird ; from the only one in which the beak is preserved to us intact, we undoubtedly recognise that they must have represented hawks or vultures, the thick neck and legs, the long talons, and the nature of the plumage point more distinctly to the vulture. The decorations on some of them, namely the chevron pattern round the wings, the necklace with a brooch in front and continued down the back, the raised rosette shaped eyes point to a high degree of conventionality evolved out of some sacred symbolism, of which these birds are

the embodiment, and the nature of this symbolism is what we now wish to arrive at.

Two of the birds, similar in character and slightly varying from the others, are represented as perched on zones or cesti; two others have only an indication of the cestus beneath their feet; a fifth has two circles carved under it, and two on the wings, a sixth is perched on a chevron pattern, hence there is a similar class of symbolism connecting them all.

My opinion, based on comparison with the other objects found, is that these birds represent the Assyrian Astarte or Venus, namely the female element in creation. Of the maternal aspect of the vulture we have ample evidence from an Egyptian source. Horapollo tells us (i. ii.) that it was emblematic of "Urania, a year a mother," whilst Aelian goes so far as to suppose that all vultures were females to account for their character as emblems of maternity. The cesti and the circles point obviously to this. In Lucian's description of a temple at Hierapolis, near the Euphrates, in his work *De Syridē dēdā*, we have much that is in accord with these temples at Zimbabwe, the double walls, the sacred enclosure, the peculiar nature and structure of the tower; and, finally, in § 33 p. 479, he mentions a curious pediment, of no distinctive shape, called by the Assyrians "the symbol," on the top of which is perched a bird. Amongst some of Schliemann's discoveries at Mycenæ there are also images surmounted by birds, which differ from the *Σύρων* in the *De Syridē dēdā*, solely in the fact that they are not shapeless but represent a nude female figure.

In the difficult question of early Arabian cult, which was closely bound up with that of Egypt, Assyria, and Phoenicia, we find the vulture as the totem of a Southern Arabian tribe, and worshipped as the God Nasr, and on inscriptions mysteriously alluded to as "the vulture of the East, and the vulture of the West." The religious symbolism of these birds is further attested by the two smaller representations of the larger emblems which we found, and which were evidently used as amulets or votive offerings in the temple, they too represent birds perched on the top of tiny pedestals.

In the centre of the temple stood an altar, into the stones of which were inserted, and also scattered around a large number of soapstone objects, representing in different forms and shapes the male organ of generation, the tower in short which stood in the temple below, the nature of which we will not discuss. One is naturally anxious to reject as suspicious any reference to phallic worship, unless there is ample proof to substantiate it; in this case, however, the facts are too obvious to admit of denial.

Firstly, there are the two solid round towers in the sacred enclosure of the building below, both of which we tested and found to be solid; they are carefully shut in, and approached by labyrinthine passages, the symmetry of design, and the careful execution in drystone building of the larger one, which stands 34 ft. in height, with a girth of 53 ft., is marvellous, and the evenness of the courses is wonderfully carried out. The towers are placed in an angle of the wall, as it were, and coincident with the sacred enclosure on the outer wall of the temple runs the chevron pattern, and this portion of the wall is alone decorated with large standing monoliths. Before the tower is a raised platform presumably for sacrifice, and the wall facing inwards, is the only one decorated with courses of black slate. Similarly, in the little ruin near the Lundi River, an indication of a round tower is roughly given in the middle of the pattern by a semi-circular bulge in the wall.

With considerable difficulty, by the aid of a monkey rope which hung near, we were able to get to the top of the tallest round tower; the summit, when perfect, would probably admit of two men standing on the top, and a few courses below the summit ran a pattern formed by the stones being placed edgeways (which from a comparison with the finds of a kindred nature I take to indicate the line of circumcision).

Again turning to Lucian's *De Syriis ded.*, the description of the Phalli towers in that temple corresponds almost exactly to ours. He describes the edifice as surrounded by two walls, with two large towers, 30 cubits in height, of solid structure, and when a priest had to ascend he had to put a rope round himself and the Phallus tower to walk up.

Montfauçon in his *L'Antiquité Expliquée* also gives us additional testimony to this tower worship. He says: "The ancients assure us that all the Arabians worshipped a tower, which they called El Acara or Alquetila, which was built by their patriarch Ishmael."

Also in the Bible we have frequent allusions to this tower worship, notably in Judges viii, 17, where Gideon is described as destroying the sacred town of the Midianites, called Penuel, or "the Face of God."

The Arabian historian, El Masoudi, also speaks of the old tower worship of the Arabians, describing them as eight cubits in height, placed in an angle of the temple which had no roof on; and, in another place, he asserts that most of these temples were round.

Phoenician temple structure also illustrates that tower worship. The coin of Byblos, with the temple and the Phallus (sacred cone) set up within the temple precincts is an excellent parallel;

also the sacred cones in the round temples of the Cabiri, in Malta, point to the same form of worship.

In the temple on the hill, with the birds decorating its outer wall, we found many soapstone objects of small size, miniature representations of the tower below.

Around the altar we found 38 of them, unmistakable phalli, most of them had the line of circumcision marked and the protruding gland; one represents the organ with testicles and seminal cord. One is a highly ornate object with a winged sun or perchance the winged Egyptian vulture on it, showing either Assyrian or Egyptian influence, and a rosette forming the summit; others again are badly executed, but the fact of finding them all in close juxtaposition around the altar, is sufficient proof of the nature of the objects and their religious symbolism.

Thus we have in both cases the larger emblems and their miniature representations, the tower and the smaller phallic objects, the large birds and the tiny amulets, proving to us that the ancient inhabitants of Zimbabwe worshipped a combination of the two deities, which represented the creative powers of mankind.

A curious confirmation of this is found in the pages of Herodotus, who tells us—

"The Arabians of all the gods only worshipped Dionysus, whom they called Ourotalt and Urania," that is to say, they worshipped the two deities, which, in the mind of the father of history, represented in themselves all that was indicative of the mysteries of creation, pointing to the very earliest period of Arabian cult, prior to the more refined religious development of the Sabao Himyaritic dynasty, when Star and Sun worship superseded the grosser forms of nature worship. Lucian, in his description of the above-mentioned temple, adds on page 477 the temple contains a shrine, on the shrine are images of a god and goddess, the goddess wears a cestus, "with which none but Urania are adorned."

The large outer wall of the fortress was decorated with small round towers alternating with monoliths of rough, un-hewn granite, some 10 to 12 feet in height. This brings us to another marked phase in the study of the mysteries of the Zimbabwe ruins, namely, the great attention paid to stones decorated and undecorated, in connection with their religion. We have already seen how monoliths decorated the outer wall of the sacred enclosure in the circular building where the towers stood; besides these in the same building are three large monoliths erected in the ground. At the summit of the fortress was a little platform also decorated lavishly with the same. Palgrave in his travels in Lower Nejd speaks of the

many monoliths he saw—"huge stones, like enormous boulders, placed endways perpendicularly on the soil . . . they were arranged in a curve, once forming part, it would appear, of a large circle . . . that the object of these strange constructions was in some measure religious seems to me hardly doubtful . . . in fact, there is little difference between the stone-wonder of Kaseem and that of Somersetshire."

El Masoudi also alludes to the stone worship of Arabia, probably this gross fetichism formed at one time a part of the national religion of the Semitic nation.

Maxime, of Tyre, says they honoured as a great god a great cut stone; Euthymius Zygabenus further tells us that apparently "this stone was the head of Aphrodite, which the Ishmaelites formerly worshipped, and it is called Bakka Ismak;" also he adds, "they have certain stone statnes erected in the centre of their houses, round which they danced till they fell from giddiness, but when the Saracens were converted to Christianity, they were obliged to anathematize this stone, which formerly they worshipped."

One of these stones which stood originally on the platform was of soapstone, 11 feet 6 inches long, and decorated with geometric patterns around it, divided into compartments by circular bands, each of a different pattern; this stone we have brought home with us, together with all the birds. Besides this we found three other fragments of similarly decorated soapstone beams, which all apparently came from the same spot; also here we found several stones of a curious nature and entirely foreign to the place and its formation. One, a blackish kind of slate, which had formed a beam with naturally bevelled edges, a fragment of basalt, and three stones with lines round them, formed by a species of asbestos eaten away, and a tiny one with curious lines around it; all pointing to the fact that the ancient inhabitants of these ruins, whenever they found a curious formed stone, brought it here and put it on the platform, where they kept all their revered stones—a spot which would compare well with the *Battuλia* or Bethel of the Phoenicians, closely akin to the Southern Arabians.

The next series of finds, namely, the fragments of soapstone bowls, brings us to consider more closely the artistic capacities of this race. The work displayed in executing these bowls, the careful rounding of the edges, the careful execution of the circle, the fine pointed tool marks, and the subjects depicted thereon, point to the work of a race considerably advanced in artistic skill.

Unfortunately of the three bowls, which would have been most instrumental in assisting our researches, we could only

find three small fragments. One of these is a fragment of a soapstone bowl which evidently had a religious procession round it, of this we have only a hand holding a pot containing incense or some other offering in it, and an arm of another figure with a portion of the back of the head with the hair drawn up in folds, but this alone is sufficient to prove the foreign element of the builders of the ruins, and that they came from more northern climes, as is also evidenced by the fact that for the town and fortress they chose the southern or shady side of the hill, whereas the Kaffirs always prefer the sunny side, and on cold days we could not even get them so much as to work in the ruins.

The second of the three fragments has on it an elaborate design taken from the vegetable world, from some plant with a spathe and an ear closely akin to an ear of corn ; this is admirably executed in soapstone and a brighter green than that employed in the other articles.

The third fragment is the lip of a large bowl which must have been over two feet in diameter and around which apparently an inscription ran, the lettering is painfully and provokingly fragmentary, and no one has as yet attempted to read it. At the same time, one cannot help seeing a likeness in these letters to certain characters on a rock, discovered and drawn by Mr. A. A. Anderson, somewhere in Bechuanaland, and also to certain of the rougher Himyaritic inscriptions found in Arabia. This is of course too speculative a point to go upon, but at the same time, I give it for what it is worth. In Charles Huber's travels in Arabia several inscriptions are given which offer a marked resemblance to the lines on our bowl.

The most elaborate of the bowls has a hunting scene around the side very well worked, and comparing well with some of the work executed during the Sabao Himyaritic period in Southern Arabia. The details are carefully brought out, the breath of the animals is depicted, the lines of the zebras, and the bird is also well done ; but the man who is hunting is more like a baboon than a human being.

Another bowl has a procession of bulls round it, depicted with very long horns ; and of the three pairs of horns our fragments show us, all are placed differently. Another fragment gives us the remains of three zebras ; and another bowl has a carefully executed cord pattern round it, whilst the last of our fragments worth mention has a chevron pattern round it, alternating with what appears to be a representation of the round tower. Besides these there are many fragments of perfectly plain bowls, notably a large one, 2 feet 6 inches in diameter, with the edges carefully rounded, a very fine piece of

workmanship, the whole of which we were able to recover, except a portion of the bottom of it.

From the minor finds very little definite can be inferred, except the world-wide commerce which was attracted here, and that this commerce was carried on by the Arabians ; there were near the surface a few fragments of Celadon pottery from China, of Persian ware, and an undoubted specimen of Arabian glass and beads of doubtful provenance, though one of them may be considered as Egyptian of the Ptolemaic period. It is impossible that a collection of things such as there could be brought together here by any but a highly commercial race like the Arabians were, or their kinsmen of Phoenicia.

Some of the fragments of pottery we found at Zimbabwe are very good, especially those of one pot, which had around it a well-executed geometric pattern, which experts consider to have been worked with a tool, and if this was the case the regularity of the execution points to a highly developed artistic skill. Then again, there are fragments of pottery lids and other ceramic evidence pointing to an advanced state of society.

The finds which touch perhaps on the most interesting topic of all, are those which refer to the manufacture of gold. Close underneath the temple stood a gold-smelting furnace, made of very hard cement of powdered granite, with a chimney of the same material, and very neatly bevelled edges, portions of which I brought home with me.

Hard by, in a chasm between two boulders, lay all the rejected quartz casings from which the gold-bearing quartz had been extracted, by exposing them to heat prior to the crushing, proving beyond a doubt that these ruins, though not immediately on a gold reef, formed the capital of a gold-producing people, who had chosen this hill fortress with its granite boulders, owing to its peculiar advantages for strategic purposes ; and the recent discoveries of gold reef near Zimbabwe form interesting evidence to the same effect.

Near the furnace we found many little crucibles of a composition of clay, which had been used for smelting the gold, and in nearly all of them exist small specks of gold adhering to the glaze formed by the heat of the process. There are tools also amongst our finds for extracting gold burnishers, crushers, &c., and an ingot mould of soapstone of a curious form, which is still in use amongst the natives much further north for ingots of iron. Mr. Rudler has kindly drawn my attention to an ingot of tin found in Falmouth Harbour, and now in Truro Museum, which is exactly the same state as this soapstone ingot mould of ours would produce. Sir Henry James in his pamphlet thereon draws attention to Diodorus' statement that the ancient

Britons made ingots of tin ἀστραγάλων ῥυθμοῖς of the shape of astragali or knuckle bone, and Professor Owen recognises this to be a form for which the term astragalus might easily be used as a simile.

An interesting parallel to the ancient gold workings in Mashonaland is to be found by studying the accounts of the ancient gold workings of the Egyptian gold mines in Wadi Allaga. The ancient Egyptians also extracted gold from quartz by means of crushing and washing, as we see from the process depicted in the paintings on the Egyptian tombs; and in any gold-producing quarter of Mashonaland, near old shafts and by the side of streams innumerable, crushing stones are still to be seen, used anciently for a like purpose. In several places there are long rows of these crushing stones, sixty or seventy in a row, which would seem to indicate that the slaves employed in this labour worked in rows chained together.

Diodorus tells us of the gangs of slaves employed in this arduous labour by the ancient Egyptians, and of the long dark shafts into which they descended. In the Mazzoe district we entered several of these ancient shafts, and it is obvious here, that not only for working the mines, but for the construction of the massive buildings, similar gangs of slaves were employed. After describing the process of crushing and washing, Diodorus concludes: "They then put it into earthen crucibles, well closed with clay, and leave it in a furnace for five successive days and nights, after which it is suffered to cool. The crucibles are then opened, and nothing is found in them but the pure gold, a little diminished in quantity."

Here we have an exact parallel to our clay crucibles of Zimbabwe.

Furthermore the gold workers of Zimbabwe were acquainted, like the ancient gold workers of Egypt, with the art of plating. This is evidenced by the spear head we there found, with a very heavy plating of gold thereon; also plating is observed on two other small fragments of iron; and an instrument found in close proximity to the furnace has obviously been used in beating gold.

I did not think much of the iron implements we found at Zimbabwe at the time, knowing the skill of the modern Kaffirs in working iron, and the avidity with which they collect all iron fragments to re-smelt in their furnaces.

However, we brought everything home with us, thinking that possibly some of the specimens might belong to an earlier period. The spear heads are obviously of the same pattern as the gilt one, which is distinctly of ancient date, having the ogee fluting still in vogue amongst the Kaffir tribes; then there are

bells like those found now thousands of miles away on the Congo, which possibly may have been an ancient pattern which the Kaffirs on the Congo with their conservative tendencies have still retained. There is work too in iron quite above the capabilities of modern Kaffirs, and tools, chisels, and adze, and spades, all pointing to a higher state of civilisation.

I will not discuss our finds now at greater length, but sum up one or two points which appear obvious.

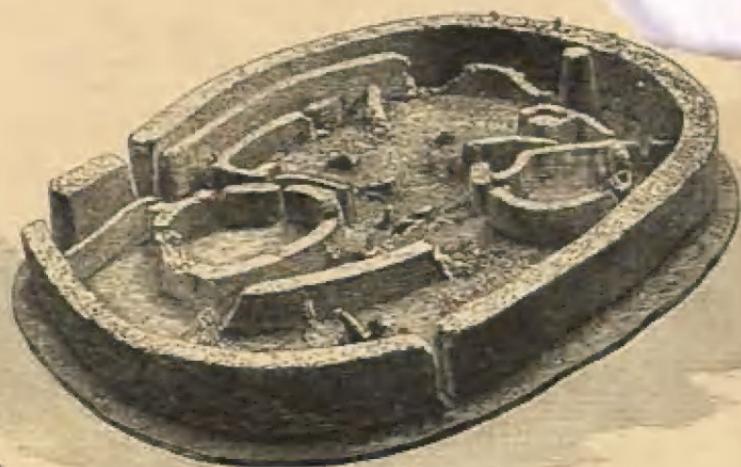
Firstly, the ruins and the things in them are not in any way connected with any known African race; the objects of art and of special cult are foreign altogether to the country where the only recognised form of religion is, and has been since the days when the early Portuguese explorers penetrated into it, and the Arabian historian, El Masoudi, wrote, namely in the tenth century A.D., that of ancestor worship; and from that time to the present day, the testimony of this historian proves to us that little or no alteration has taken place in the nature of the people. The cult, too, is distinctly pertaining to a pre-Mahommedan period, which is perhaps the furthest back that we can go with any degree of certainty, though the presumptive evidence is to the fact that the ruins date back to a much earlier period.

The second point is also obvious, that the ruins formed a garrison for the protection of a gold-producing race in remote antiquity. Forts of a similar structure are found all the way through the gold-producing country, and were erected to protect the mines.

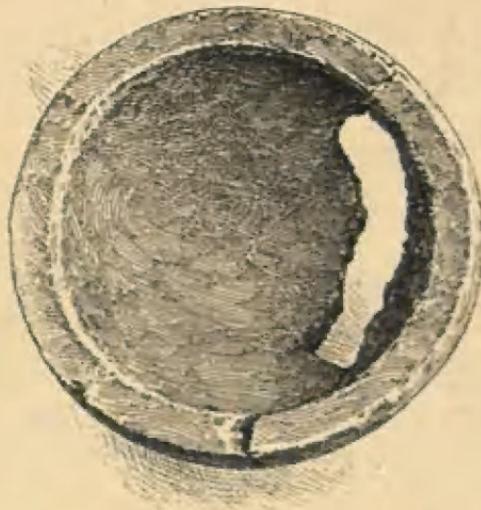
The cumulative evidence in favour of this race being one of the many tribes of Arabia is very strong. The special cult, the monolithic decorations, and the later evidence of Arabian intercourse with this country when their power was reduced only to the coast line.

Furthermore, we know that the Red Sea was bristling with activity centuries prior to our epoch; that Arab ships brought spices from India, the cassia tree from China; and the wealth of Arabia in those days was proverbial. The Bible is full of allusions to it, the monuments of Egypt bear equal testimony to the wealth of the people of Punt. Aristeas tells us "That a large quantity of spices, precious stones, and gold was brought to Rome"—διὰ τὸν Ἀράβων not from Arabia, but—"by the Arabian." They were in fact the carriers of the ancient world. The testimony of most travellers is to the fact that little or no gold came from Arabia; it is, therefore, not too much to suppose that a portion at least of the "Thesaurus Arabum" came from this country as well as from India.

I have not space to go into the testimony given by the German authorities on this subject. Kremer in his "Studien zur Cultur



MODEL OF LARGE CIRCULAR BUILDING.

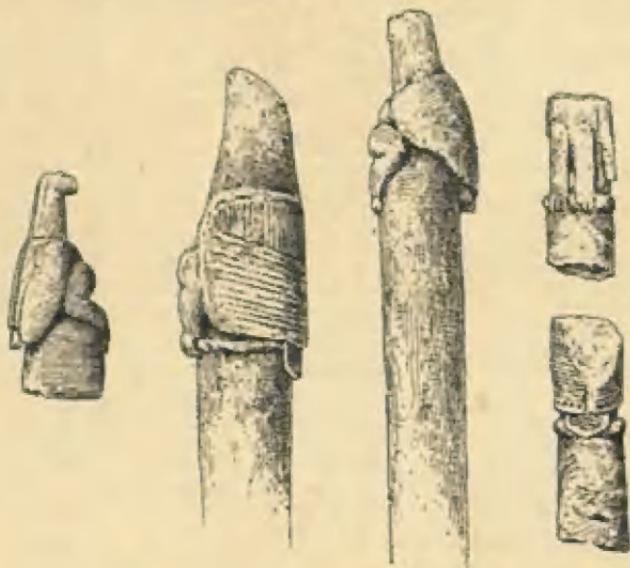


LARGE PLAIN SOAPSTONE BOWL.





TWO BIRDS ON PEDESTALS. 5 FEET 4 INCHES HIGH.



BIRDS ON PEDESTALS. ABOUT SAME HEIGHT AS ABOVE.





SOAPSTONE BOWL WITH HUNTING SCENE.



FRAGMENTS OF SOAPSTONE BOWL WITH BULLS.



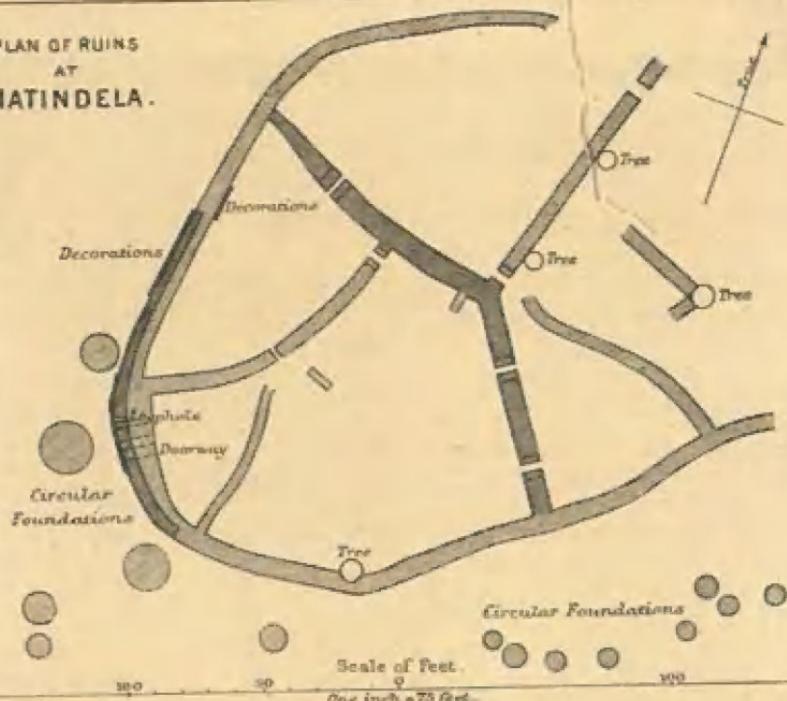
FRAGMENT OF SOAPSTONE BOWL
WITH PROCESSION.



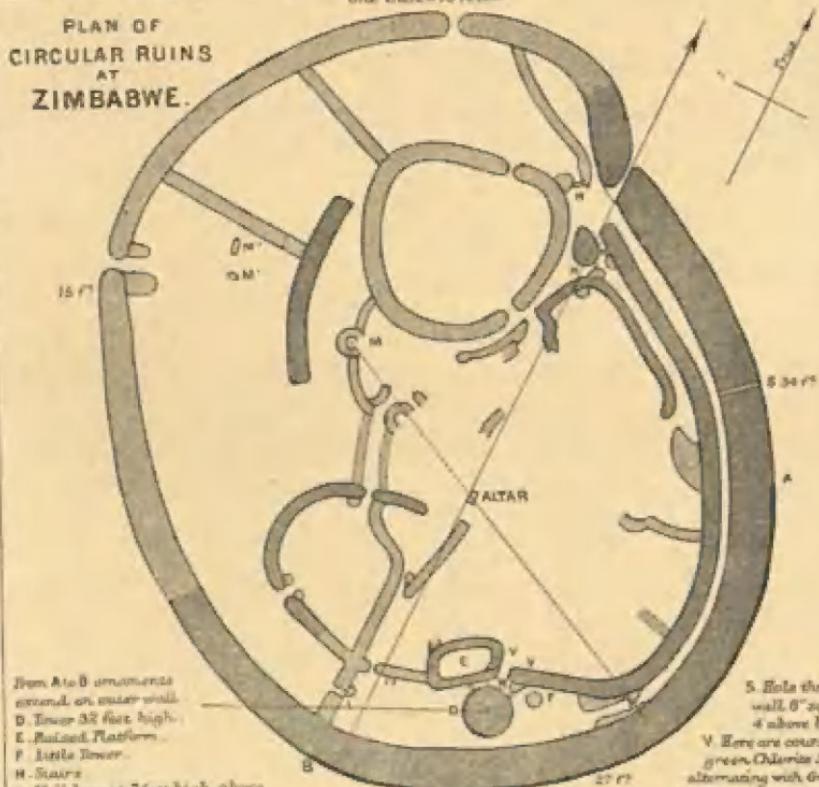
MINIATURE BIRDS ON PEDESTALS, $3\frac{1}{2}$ INCHES.

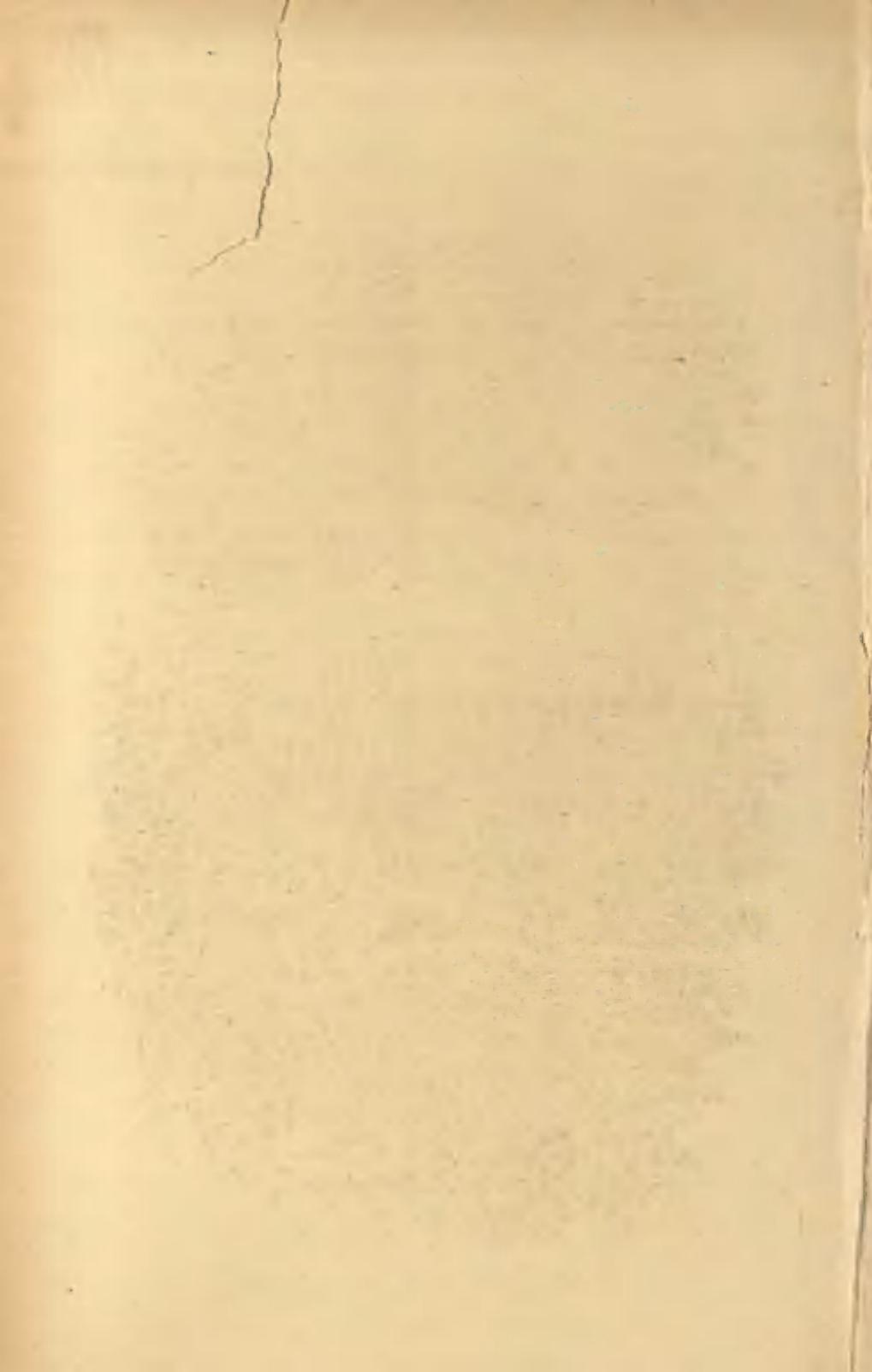


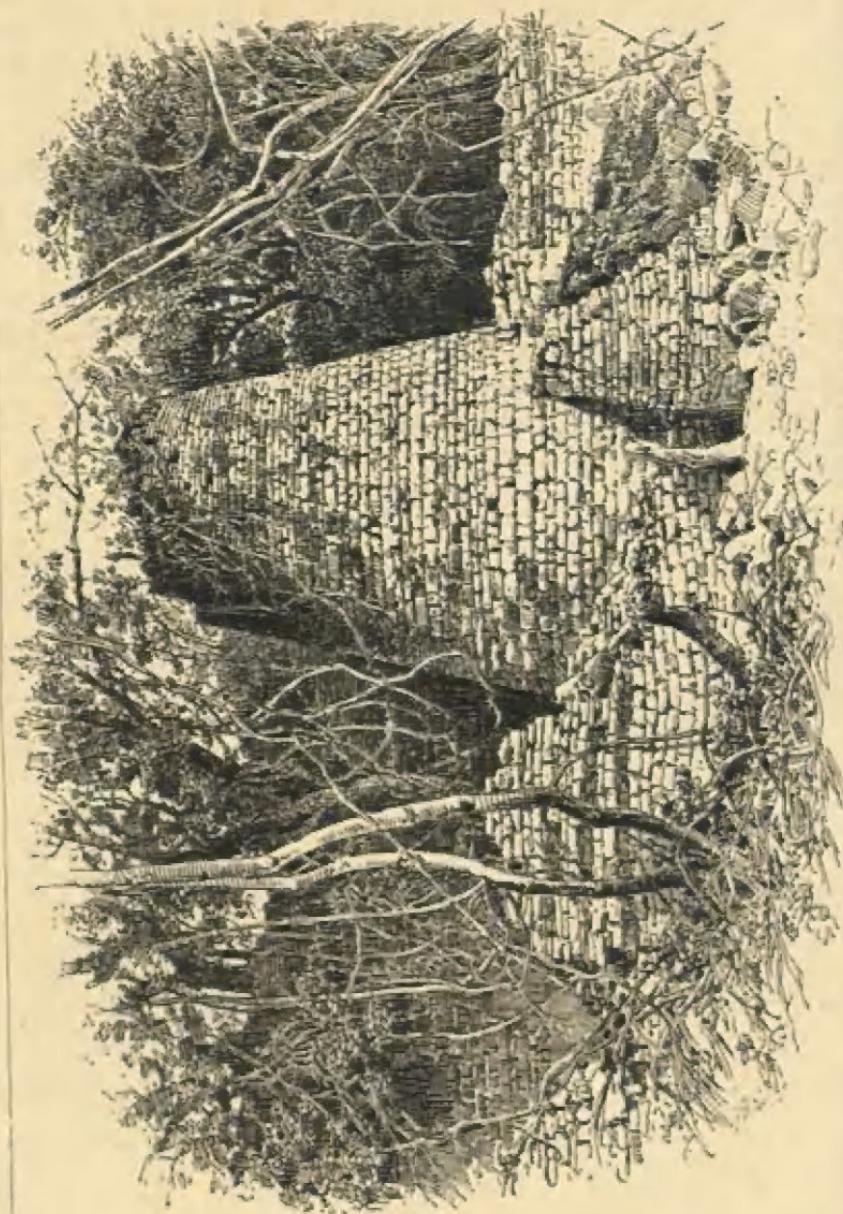
PLAN OF RUINS
AT
MATINDELA.



PLAN OF
CIRCULAR RUINS
AT
ZIMBABWE.







CIRCULAR TOWER IN ROUND BUILDING, ZIMBABWE, 32 FEET HIGH.

geschichte des Arabiens," and Glaser in his travels in Arabia, go exhaustively into the question, and their evidence, all point, in the same direction and supply us with much valuable evidence in confirmation of the Arabian theory.

Our stay at Zimbabwe lasted over two months, during which time we employed native labour, superintended by a white man. The area covered by the ruins is very considerable, and all that we could do, in the space of time and with the money at our command, was to clear the ground of the vegetation which covered it, and excavate in some of the most likely places.

There is, therefore, a vast area of ground still untouched, which may in course of time yield further evidence as to the origin of the builders of these ruins, and, as the subject is archaeologically of great interest in revealing the early history of mankind, I hope that ere long more work may be done in this new field for research.

(*Plates kindly lent by the Royal Geographical Society.*)

DISCUSSION.

Mr. GALTON said: We heartily, and not for the first time, welcome Mr. and Mrs. Bent to our Institute, who, with equal zeal and enterprise, have co-operated for many years in the archaeological exploration of sites famous in classical history, and have now investigated the strange ruins of Zimbabwe as carefully and thoroughly as their time permitted. We must also acknowledge a debt of gratitude to the Royal Geographical Society, for it was through the help of their grant in aid, that this notable work was carried on, which has yielded results as welcome to our Institute as they were to that influential society.

Sir JOHN EVANS pointed out the difficulty that there was for any one versed only in European antiquities to form an idea as to the chronology of these African remains. The celadon porcelain might possibly have a date assigned to it, but even then its presence would only go to show that the place was occupied as a commercial centre at a certain date, and not when it was first founded and the grand stone structures erected. It seemed to him strange that as so many circumstances pointed to the place having been occupied since the days of the Ptolemies, no coins had as yet been found there. With regard to the mould for ingots of gold, he mentioned that in his own collection was an ingot of bronze of the same form as that given by the mould, but of only about half the length, which had been found with bronze tools and weapons at Makarska in Dalmatia. He expressed a hope that eventually some passage in one or other of the Arabian historians might throw light on the origin of these ruins, and finally congratulated Mr. and Mrs. Bent on the success of their expedition and on their safe return to this country.

Mr. READ said : I must confess to have been strongly of opinion, on seeing the very remarkable antiquities discovered and brought home by Mr. Bent, that their origin was rather to be sought among the ancestors of the races still inhabiting the southern part of Africa, though perhaps their present representatives might not be found in the immediate vicinity of Mashonaland. This opinion was founded upon the striking resemblance between many of the metal objects discovered, and the forms of similar tools or weapons still found among the native races of South Africa. For instance, an iron axe in Mr. Bent's collection is precisely the Bechuana axe of the present day ; the double iron bell is still common among the tribes of the West, and what is still more remarkable, the spear heads with their ogee section, are reproduced constantly by the Zulus in their assegais, as well as by tribes in Central Africa.

This opinion I have abandoned, or to speak more precisely, I have revised it, after several conversations with Mr. Bent, who has done me the honour to consult me on the matter, though I fear with little practical result. I am now rather inclined to think that though my premisses were right, the deduction was wrong. That is to say, that the resemblance between these ancient objects and the present tools and weapons does exist, but that this resemblance is rather due to these types having been introduced and impressed upon the local race by a foreign and more civilized people, though whence this gold-seeking race came, I do not feel by any means sure.

Mr. Bent has been, I think, inclined to dissociate the iron objects from those of bronze, in the belief that the former are probably of more recent date. In this I do not feel disposed to agree with him. I have carefully examined the whole of them, and to my eye they are absolutely of the same technique, material apart. To cite one instance, the bronze spear head, apparently gold plated, which has some distinct peculiarities of detail, is in all respects identical with another specimen made of iron.

The fragments of celadon porcelain found among the ruins are, without doubt, of Chinese manufacture, and call to mind the large quantity of this ware discovered by Sir John Kirk, along the coast south of Zanzibar. It is very probable that these fragments from Zimbabwe formed part of the same trade as those found by Sir John Kirk, for the Chinese ware of this kind is of such strength and durability that age makes but little change in it. Unfortunately, however, it serves no good purpose in fixing an early date in the present case ; seeing that the first mention of it in Western history is the 13th century. The fragment of Arab glass discovered is of very small size, but it has evidently been decorated with gilding, and I should assign it to the 14th, or at the earliest the 13th century.

I should like, before sitting down, to express my admiration of the unusual openmindedness with which Mr. Bent has approached this very obscure subject. I found him quite ready to pursue the faintest clue, and eager to accept any reasonable hypothesis, a con-

dition of mind as agreeable as it is uncommon among explorers in distant lands, and it is somewhat humiliating to our nineteenth century archaeology that no one has been able to suggest an improvement upon his modestly advanced theory.

Mr. A. L. LEWIS, who has been corresponding with Mr. Bent in reference to the question of orientation raised by Sir J. Evans, writes that Mr. Bent informs him that the orientation of the South African sanctuaries is about 32 degrees south of east, while the sun on the longest day should rise there between 25 and 30 degrees south of east, and that many other interesting mathematical points concerning the structure of the ruins are being worked out and will be of great value. Mr. Lewis adds that the orientation may be rather toward the first appearance of the dawn than of the sun itself, which seems to be the case in some of our own circles. Major Conder in his "Heth and Moab" has said: "The menhir is the emblem of an ancient deity; the circle is a sacred enclosure, without which the Arab still stands with his face to the rising sun;" so that sun worship and phallic worship appear to be associated with circles and with single stones in a country not far from that Arabia to which the people are apparently traced who set up their phallic pillars and menhirs, and placed them in the direction of the rising sun in South Africa.

Miss BUCKLAND said that Baines, who was the first of modern travellers to call attention to these remarkable ruins, had figured stones protruding horizontally from the wall of the hill fortress, as though they had supported a gallery, and upon one of these stones was drawn a lozenge-shaped pattern connected by waved lines resembling the Egyptian hieroglyph for water, and wished to know whether Mr. Bent had found this stone, or any of the inscriptions, which all the old Portuguese travellers mentioned as existing over the gateway.

Miss Buckland thought also that the flora of the country should be taken into account in determining the builders of Zimbabwe, as pioneers of the Chartered company had spoken of passing through miles of wild orange groves, and finding pine apples and other fruits, not supposed to be indigenous to South Africa, growing in profusion; it is also said that in Manicaland alone, south of the Zambesi, is the cotton plant cultivated and woven into cloth, all which seemed to point to Asia as the home of the builders of Zimbabwe, and the numerous similar ruins scattered through so many miles of country inland; but before deciding that Arabia sent forth these skilled workmen, it would seem desirable to know whether similar buildings are to be found in any part of the Arabian peninsula.

In answer to Sir J. Evans' question Mr. BENT gave the measurements and scale of the chief ruins, and stated that the orientation of all the temples is south-east, and in reply to Mr. Charles Read's remarks he gave further instances as regards the initiative and

conservative tendencies of the Abantu races, showing how they have derived their present knowledge of iron smelting and art from a prior civilisation.

As to the fragments of celadon and Persian pottery, the Arabian glass and iron implements, Mr. Bent stated that they were quite on the surface of his excavations, and their value in fixing the date of the ruins would therefore be naturally insignificant.

ANTHROPOLOGICAL MISCELLANEA AND NEW BOOKS.

International Oriental Congress, London, September, 1892.

Section of Anthropology and Mythology.—President, Dr. TYLOR; Foreign President, Prof. DARMESTETER; Secretary, S. ARTHUR STRONG, Esq.; Foreign Secretary, Count ANGELO DE GUBERNATIS.

The following abstract of the proceedings of the Anthropological Section is reprinted by permission of the Editor of the *Times*.

Dr. E. B. TYLOR delivered his Presidential Address, in the course of which he examined the traces of the ancient stone age in the Oriental region, with the view of establishing the basis upon which later and higher stages of civilization were raised. In Europe, as is well known, the rudest stone implements of the so-called palæolithic age, which have carried back man's antiquity to a period of even geological remoteness, belong to the period of the mammoth and the rhinoceros. Such implements are also found in districts at the edge of the Oriental region—viz., Egypt, Syria, and India. What Dr. Tylor dwelt on as especially important is the fact that implements of even a lower type are found in Tasmania, and have there lasted on into the time of Englishmen now living, who have seen and described their making and use by these now unhappily extirpated savages. These implements are ruder in make than those of the mammoth period, inasmuch as their edges are formed by chipping only one surface of the stone instead of both as in the European examples. They were never fastened in any kind of handle, which is proof of itself that it was not by degradation from any higher stage that the Tasmanians reached their present level of rudeness. On the contrary, they adopted the European hatchet as soon as they saw it, and it is inconceivable that having once realised the use of the handle they should at any time have abandoned it to grasp the blade with their hands. In the light of these facts palæolithic man ceases to be a mystery, now that we can see the portraits and examine the life of his modern counterpart. The Tasmanians were rude and simple savages, perhaps the rudest that have ever been seen living in a normal state. With no bow and arrow, no throw-stick like that of their Australian neighbours, they lived a nomad life, content with the rudest shelter of boughs. They nevertheless showed fairly developed mental and moral capacity. Their language was of the agglutinating type, meagre but efficient. Their morals were those of kindness to their friends, passing readily into ferocity when

they were frightened or hurt. Their religion was rude but definite, comprising a clear idea of the human soul, which they called shadow. The shadows of their dead ancestors were their guardian deities. An echo was a "talking shadow." Their highest clearly conceived deity was he of the thunder and lightning. Dr. Tylor then passed from these representatives of the lower stone age to consider their successors of the neolithic period. Its traces reach across from Egypt, where Mr. Petrie's researches have enabled us within the historic period to see flint giving way to copper and bronze tools. At the other side of the world, the South Sea Islanders with their polished adzes are the best known representatives of the stone age. Dr. Tylor, however, laid stress upon the point that they must not be considered stone-age men in an untouched state of nature. They are an example of the fact that even savage life must be closely looked into to see whether it has undergone influence from without. It is plain that Asiatic influences have had their share in shaping South Sea Island life. Kites and jews-harps are the toys of Asiatic nations, but they are found as far as New Zealand, where they may well have been used before the comparatively recent time when they reached England. Especially there is spread over the South Sea Islands a theory of the universe, consisting of an upper world of heavens arranged in stages, with a corresponding lower world on the same plan. Such a theory, quite beyond barbaric invention, can only be considered as borrowed from Asiatics, among whom such theories of heavens and hells, themselves derived from the planet-spheres of Babylonian astronomy, fill Hinduism and Islam. It is probable that in this case the line of transmission should be traced from India across the Malay Peninsula. The paper was illustrated by an exhibition of Tasmanian stone implements.

A vote of thanks to the President was proposed by Count A. de GUBERNATIS, and seconded by Professor JAMES DARMESTETER.

A paper was read by Count ANGELO DE GUBERNATIS on "Le Rôle du Mythe dans le Conte Populaire," in the course of which he urged upon the members of the section the importance of forming a systematic collection of Oriental folk-lore, ancient and modern. The paper was followed by a discussion, in which the President, Professor Darmesteter, Professor Tchéraz, and Mr. Hagopian took part, and a proposal was made by the Secretary and adopted by the meeting to the effect that Professor de Gubernatis's suggestion should be accepted, and a provisional committee formed to consider what steps should be taken to carry it into practical effect.

Professor TCHÉRAZ read a paper on "Armenian Mythology."

A paper was read by Professor T. DE LACOUPERIE, "Sur le Coco du Roi de Yueh et l'arbre aux enfants," in which he began by discussing the origin and meaning of the word "coco," and of the legends connected with the cocoanut in the folk-lore of different countries. The conclusion was that the story of the cocoanut of

the King of Yueh represented the primitive form of the legend found in various forms in Albiruni and the Mahabharata of a tree upon which children or diminutive men grow like fruit.

The paper was followed by a discussion, in which the President, Count de Gubernatis, and Professor Tchératz, took part.

A paper by Signor Girolamo Donati on "Una Tavoletta Angurale Indiana," was read by Count ANGELO DE GUBERNATIS, who presented a photograph of a copper tablet, preserved in the Indian Museum at Florence, containing a series of texts in praise of the god Mangala, which have been translated by Dr. Donati. The author shows that the god Mangala is no other than Karttikeya, and he calls attention to a new case of mythological atavism in the figure of this god of war and nursing of the Pleiades, whom he connected, as well as the god Ganeça (another son of Civa), with his grandfather Indra and the Maruts.

Professor KOVALKVSKEY read a paper on Iranian influences in the Caucasus, which can be traced not only in the survival of names like that of Ormazd, but in certain superstitions connected with the burial of the dead, the character of impurity attaching to the cat, and the magical virtues assigned to the clippings of the nails and hair of human beings.

The paper was followed by a discussion, in which the President, Dr. Gaster, Professor Tchératz, and Count de Gubernatis took part.

Mr. W. ST. CHAD BOSCAWEN read a paper on "Pictorial Systems of Writing as Evidence of Early Civilization." This paper described the evidence of the important painted hieroglyphic signs from the tombs discovered by Mr. Flinders Petrie at Medum. These signs throw an entirely new light upon the earliest stage of Egyptian civilization, and carry it back into the prehistoric age. The tombs at Medum were the oldest in Egypt, and belonged to the fourth dynasty, of the age of Senofru. The hieroglyphics being beautifully coloured, it was possible to detect the nature of many signs not hitherto identified. The sign for "water" was not derived either from a lake or a river, but from a wave-broken surface. It being coloured black or dark blue seems to indicate its derivation from the sea. In the same manner the "bow," usually called the Libyan bow, here bore so close a resemblance to the archaic Babylonian bow as to be perhaps connected with it. The study of the hieroglyphics of Chaldea in comparison with those from Medum showed both those countries as using stone weapons and tools, wooden sickles with flint teeth being found in Egypt at Kahun corresponding exactly with those in the painted hieroglyphics. In Babylonia, as in Egypt, fire was kindled by the revolving fire-stick. There was evidence from these pictures of roads and canals in Egypt and Chaldea at the earliest times. He then urged the section to study ancient inscriptions of a pictorial nature, which, even if they remained undeciphered, at the same time might become a mine of wealth to the anthropologist.

A paper on "Anthropology in India," by Mr. H. H. Risley, in the absence of the author, was read by the SECRETARY. After a short statement of what had already been done in the way of anthropological investigation in India, he said it was to inquiry in the Punjab and beyond the Punjab frontier that he looked for the results of the highest interest. During the years 1887-8 a small but very interesting series of measurements, extending to only nine tribes and castes, were taken under his supervision by Alí-ud-din, a civil hospital assistant at Lahore. The results appeared to be of the highest interest with reference to recent speculations concerning the origin of the Aryans. They were confirmed to a remarkable extent by some measurements recently taken by himself of a number of Káfirs, Hunzas, and Nagars who were brought down to Calcutta in March last. It was curious to find among these wild tribesmen, who had just been fighting against us at Nilt, confirmation of the statement quoted by Grote ("History of Greeks," X., 168, note) from Ritter's *Erd-kunde*, that "among the inhabitants of Kafiristan there exist traditions respecting Alexander, together with a sort of belief that they themselves are descended from his soldiers." Among the men measured were two Nagar chiefs with fair complexions, light-brown eyes, eyelashes, and moustaches, and limbs of perfect proportions, who looked as if the figures on a Greek vase had by art-magic been endowed with life. They claimed descent from no less a person than Alexander himself, and one of them bore the name of Iskandar Khan. In conclusion, he begged the members of the Congress to bear in mind that the sort of "open-air bureaucracy" by which India is governed, which spends a great part of the year in camp, and has unrivalled opportunities for free personal intercourse with the people, is the finest agency for carrying on anthropological and ethnographic inquiries that it is possible to imagine; that by engaging in such inquiries these officials render themselves more efficient for Government purposes and more popular with the people; and that the knowledge to be acquired in this manner throws the most striking light on the annals of classical antiquity as well as on the earlier phases of primitive human society.

Mr. WILLIAM CROOKE, Bengal Civil Service, read a paper describing the work already done in connexion with ethnographical research in Northern India. At the desire of the Supreme Government, the Government of the North-Western Provinces, who are represented at the Congress by Mr. Crooke, as their delegate, had decided to create an ethnographical board, with the writer of the paper as general director, to initiate a series of inquiries similar to those in progress in Bengal under the supervision of Mr. Risley. The board had already undertaken the classification of the castes according to their habitat, and had selected a staff of inquirers throughout the province to whom a series of questions had been issued. These will ultimately form the basis of an ethnographical handbook for the province. Mr.

Crooke proceeded to give illustrations of what India could do in the way of ethnology and folk-lore. He suggested that the Indian evidence was opposed to the theory which made communistic marriage and polyandry necessary stages in the human marriage. Exogamy, the rules of which would be investigated by the board, was more probably the result of the survival of the fittest than due to a recognition by primitive savages of the evils of interbreeding. He described the general principles on which exogamy was based in India, and went on to the instances of survival in marriage rites of capture, purchase, and exchange. After referring to the parturition-pollution and the couvade, he went on to detail the barrow method of disposal of the dead. He then dealt briefly with the popular rural religion, which is very different to orthodox Hinduism. He described how far the ethnographical survey intended to deal with folk-lore in its two divisions, of folk tales and popular superstitions; and, after detailing the difficulties under which ethnological inquiry was conducted in India, he pleaded for the sympathy and support of the Congress in the survey now in progress.

A discussion followed, in which the President, Mr. Vincent Smith, Mr. Baines, and Mr. Browning took part. Mr. V. Smith made some remarks upon the manners and customs of the Jâts, and recommended the preparation of a monograph upon the subject. Mr. Arnold called the attention of the meeting to a little-known religious sect in India, the Mâhâ Mandala Sabhâ, and Mr. Baines contributed some observations upon the folk-lore of the Bhils.

A proposal was submitted to the meeting by the President, and carried unanimously, "That the Anthropological Section of the Orientalists' Congress desire to express their sense of the political as well as scientific importance of the anthropometric and descriptive information collected under the orders of the Government of Bengal, and note with satisfaction that the Government of the North-West Provinces and Oude has taken steps to promote ethnographic studies within its jurisdiction, and trust that this line of research may receive throughout India the countenance and support of other local governments and administrations. Sufficient interest exists among Indian officials to enable the investigations in question to be carried on without the necessity of applying to Government for a subsidy."

A paper was read by Professor LIEUmann on "Rosaries in Use among the Jains." He cited passages from Prakrit literature, which prove that they must have been in use in India at least as early as the second century B.C. The President exhibited specimens of Vaishnava and Shaiva rosaries, and a discussion followed in which Mr. Pfoundes, Professor Kovalevsky, Mr. Crooke, and Mr. Taw Sein Ko took part. Mr. Pfoundes exhibited diagrams of rosaries of unusual type in use among the Japanese, while Mr. Taw Sein Ko spoke upon the rosaries of Burmah.

A paper on the "Marital Relations of the Nicobar Islanders," in the absence of the author, Mr. E. H. Man, was read by the SECRETARY. The conclusion was that a Nicobarese wife is regarded by her husband in all respects as a helpmeet and equal, who, if she happens to possess any special merit or claim to superiority on account of her personal attractions, skill in household duties, or proficiency in other respects, is usually able to assert her authority without exciting any anger or opposition in her husband, who is far too sensible of his good fortune in having won so excellent a wife to think of risking his happiness and comfort by offering any serious objections to her projects and desires. The following proposal was then made by the President, and carried unanimously:—"That this section desires to call the attention of the Congress to the importance of forming a collection of Oriental folklore on a systematic basis by the co-operation of Orientalists in each country."

"Excavations in Bokerly Dyke and Wansdyke." By Lieut.-General Pitt Rivers, F.R.S., vol. iii.—General Pitt Rivers has presented a third of his noble volumes to the Institute, the value of which is enhanced by an excellent likeness of the Author as frontispiece.

The excavations recorded in this volume are of especial interest, as affording data for fixing the period of construction of those great earthworks commonly called Belgic ditches, of which the best known and most extensive is the Wansdyke, which can be traced for a distance of sixty miles from "near the Bristol Channel by Bath, to beyond Savernake Forest, and then turning in the direction of Andover," whilst the second dyke examined, known as Bokerly Dyke, "is about four miles in length, and the two together, though not continuous works, defend the whole south-west promontory of England, including Wilts, Somerset, Dorset, Devonshire, Cornwall, and a part of Hants, from an attack from the north and east," supplying evidence, as General Pitt Rivers believes, of "a great war, in which the whole of the south-western portion of the country was arrayed against the rest of Britain," and referring to some missing page of English history.

These great earthworks have hitherto been regarded by antiquaries as of pre-Roman and Belgic origin, but the excavations of General Pitt Rivers have proved conclusively that "both works, at the places where I excavated them, are Roman or post-Roman. The Belgic theory has been completely overturned, and although the question of a Romano-British or Saxon origin is still open for future enquiry, some probabilities only pointing towards the former hypothesis, no reasonable man can ever again assert that either of these dykes, at the spots where I examined them, are pre-Roman, or that the Bokerly Dyke was erected previously to the time of the Emperor Honorius, that is to say, previously to the time when the Roman legions evacuated Britain."

Such being the conclusions arrived at, let us examine succinctly the facts upon which these conclusions are based.

These are chiefly the coins and other relics found in the body of the rampart, and which must therefore have been in the soil when it was thrown up in the construction of the work, being found chiefly near the old surface line. The coins found at Bokerly range from Valerian to Honorius, with one of Hadrian and two of Marcus Aurelius; by far the larger number belonging to the period between A.D. 306-361, including the reigns of the Roman Emperors from Constantius I. to Julian II. This period is represented by 593 coins out of a total of 1,210, whilst two only of Honorius were found.

This abundance of Roman coins, and also of Roman and Samian pottery, with other relics, undoubtedly Roman or Romano-British, seem to point to the prior existence of a Romano-British settlement near the portion of Bokerly Dyke excavated, and this settlement General Pitt Rivers has discovered by trenching at Woodvates, identifying it with the Vindogladia of the Itinerary of Antoninus, which was twelve Roman miles from Sorbiodunum, almost the exact distance of this newly discovered settlement.

The remains found at Woodyates seem to tally pretty closely with those of the other Romano-British villages excavated by General Pitt Rivers: amongst them may be mentioned a hypocaust like those at Woodcuts. An elaborate system of drainage existed, but like the refuse pits at Woodcuts and Rotherley, the drains had been filled up and used as places of sepulture; the skeletons found there having been buried both in extended and crouching positions, the stature being generally small, although averaging a little higher than those at Rotherley, and the skulls dolichocephalic, although there is evidence of an admixture probably with the Romans, in two brachycephalic and nine medium skulls.

Bokerly Dyke, which now serves as a boundary between Wilts and Dorset, was evidently a defensive work, although there would seem to have been many gaps in it, which, however, General Pitt Rivers thinks were filled by almost impenetrable forests which might have been fortified by an abattis of felled trees. That portion of Vindogladia excavated by General Pitt Rivers lies to the north of the ditch, and therefore could not have been defended by it, but he thinks the main body of the settlement will probably be found to the south of the Dyke, between it and the present village of Woodyates, the earthwork having been thrown up as a defence against an enemy approaching from the east, perhaps the Saxons.

Two ditches, one behind the other, have been traced for a considerable distance, the one to the rear being evidently much older than the other, having apparently been filled up when the second was dug.

The date of the earlier ditch is not conclusively proved. "Two hundred and sixty feet of rampart," says General Pitt Rivers, "was dug on the south-east of the Epaulement, without finding anything Roman except some dubious pieces of pottery quite near the surface. The bulk of the pottery was of a kind that might be attributed to the British as well as the Roman Age. This goes a long

way towards proving that the Dyke to the south-east of the Epanlement was earlier, and that the extension of it to the north-west was made in Roman or post-Roman times, but it is not conclusive. This spot is more distant from the settlement than Sections 1 and 2. Whatever kind of pottery exists in the soil will be thrown up into the rampart, and at whatever period a rampart may be made, it will disclose only such kinds of pottery as the soil contained, or such as might have been accidentally dropped into it during its construction. The absence of Roman pottery is, consequently, no proof that a rampart is earlier than the Roman times, though it may leave the question of date open." It is important to bear this in mind, for in the excavations at the Wansdyke near Devizes, there was a remarkable absence of Roman coins, although red Samian ware was found on the old surface, which must therefore have been there before the erection of the rampart, and also an iron cleat, used for fastening sandals, similar to others found in Bokerly and at Rotherley.

Of this great entrenchment, rivalling in extent the wall of Hadrian in the north, and being, like that well-known work, strengthened at intervals by camps or fortifications, General Pitt Rivers says that "although its Roman or post-Roman origin has been satisfactorily determined," still the absence of coins renders it difficult to determine the precise date of its erection, and it may have been raised after the expedition of Aulus Plautius, in A.D. 43, or during the troubles in A.D. 208, when the Emperor Severus was obliged himself to check the inroad of the Caledonians, or by the Romanised Britons, "as a defence against the Picts and Scots, when the Britons were driven into the south-west corner of the country, whilst Bokerly, at a somewhat different time, may have served to protect them against the Saxons," or both works may have been thrown up by the Saxons; but General Pitt Rivers rejects the last supposition, on the ground that if erected by the Saxons it would have been mentioned by some of the Saxon chroniclers, and the name 'Wausdyke,' supposed to signify Woden's Dyke, would hardly have been given to it by the Saxons. To this I may, perhaps, be allowed to add as another reason, the absence of all Saxon reliques, which certainly must have been found in some part of the work had the erectors been Saxon, whereas, as far as I can judge, all the reliques exhumed belong to the Britons, Romans, or Romanized Britons. The number of these reliques, however, is not great, as compared with those found at Bokerly and Woodyates, consisting almost entirely of pottery, an iron cleat, knife, and nails. Amongst the pottery red Samian ware of excellent quality was found, with various coarser kinds, perhaps British, and some described as nondescript, resembling that of the bronze age.

Here, too, as at Bokerly, there are traces of an earlier entrenchment, the outer bank of the Wansdyke having been thrown over it in one part, whilst a curve is made in the formation of the dyke, apparently in order to avoid the destruction of this older work. Although General Pitt Rivers assigns both the entrenchment and

the Wansdyke to Roman or post-Roman times, it is very evident that a portion at least is older than the Bokerly Dyke, and it is to be hoped that General Pitt Rivers will extend his excavations to some other part of this great defensive work, so as to be able to assign a definite period for its construction; and, if he could be persuaded to include the vast and mysterious monuments of Avebury and Stonehenge in his investigations, archaeologists would owe him a still deeper debt of gratitude.

It is impossible in a short notice to mention all the points of interest in this splendid volume, but I must call attention to the skulls found at Bokerly, as described and measured by Dr. Garson, and to some others, figured, from Hunsbury Camp, Northampton, one of which is remarkable from having three singular perforations in a triangle on the vertex. These holes were apparently cut after death, for what reason is not easily determined. If made for trephining during life, the patient must have died under the operation, but the portions cut out seem too small to have been abstracted for amulets. Very similar holes, varying from a third to half an inch in diameter, have been found in some American skulls, and are supposed to have been used for the purpose of suspension, although Mr. Gilman "found in a mound, at Devil River, Michigan, the remains of a person, evidently of rank, lying upon his back, but with the characteristic perforation in his skull."¹ The Hunsbury skulls are referred to the late Celtic period.

The maps, plans, and relic tables which accompany this work render it most valuable to students, and show the minute, and it may be said affectionate care bestowed upon these excavations by the Author.—[A. W. B.]

Bark Cloth of Uganda.

(Reprinted from the Kew Bulletin (2:63) by permission of H.M. Stationery Office.)

One of the most interesting of recent additions to the Museums of Economic Botany at Kew has recently been received from Sir John Kirk, G.C.M.G. It consists of a large sheet of bark cloth prepared by the natives of Uganda from the inner bark of a species of *Brachystegia*, a small genus of trees belonging to the *Cesalpiniace* sub-order of the natural order *Leguminosae*. The specimen is about 14 feet 6 inches long, 7 feet broad, and $\frac{1}{2}$ of an inch in thickness, and is of a reddish-brown colour, somewhat lighter on the under side, and is slightly crimped, probably the result of having been beaten out with grooved clubs.

The genus *Brachystegia* is confined to tropical Africa, and seems to be generally used by the natives as a source of bark cloth. Messrs. Speke and Grant in their expedition to the sources of the Nile, 1860–1863, made some interesting notes on the preparation and uses of cloth from this source, which it may be well to add.

¹ Dr. Fletcher on "Perforated American Crania," "Contributions to American Ethnology," vol. v, p. 25.

They say of *Brachystegia spiciformis*, Benth., that it is a light graceful tree of 20 to 40 feet high, common in rich forest, and is known in the Robeho Mountains, Zanzibar, under the name of "M'chenga" or "M'nenga," the bark of which is made into kilts, cloths, band-boxes, huge grain stores, matches, roofing for camp huts, &c.; they also add that a blood-red juice exudes on cutting the bark. These same explorers collected slight herbarium material at Keegwah in lat. 5° 5' S. of what is so far determined as *Brachystegia tamarindoides*, Welw. var.? With the following note—"Native name 'Mecombo,' a first-class tree, as it has so many uses. Tree 50 feet high, long naked trunk 9 feet in circumference. Foliage deep green. The wood is considered good for building. Its bark after being boiled and prepared is made into white sheets or cloths worn by the natives at 10° S. They also make canoes, boxes, matches, and ropes from it. Its honey is considered very superior in flavour and whiteness. First met with 30 miles from the sea; afterwards in the interior it was frequent. It is so plentiful at 6° S. lat. that our temporary huts were roofed with its bark, and my plants were protected by planks of its bark, which answered admirably, being light and stiff."

During Livingstone's Zambezi expedition in 1860, Sir John Kirk collected specimens of *Brachystegia appendiculata*, Benth., a tree of 20 to 40 feet high in the highlands of the Batoka country, where it is known under the name of "Motondo" (Setoka), the seeds being eaten by the natives; he also collected the same species near Muata Manja, 14° 19' S. lat., and states that the fibrous bark is made into cloth by being beaten out. According to Dr. Meller this tree is known as "Chonga" near Zomba. The herbarium contains a specimen of *Brachystegia longifolia*, Benth., collected by Mr. J. Buchanan in the Shire highlands, and bears the following label—"Njombo. Bark cloth tree, wood very soft." Another herbarium specimen collected by Sir John Kirk near Kusuma, on the river Shire is labelled *Brachystegia*, sp. nov., and is described as being a good-sized tree with a fibrous bark which is used for cloth.

Since the above was written a report has been received through Sir John Kirk from Captain Lugard, the officer now commanding the Imperial British East Africa Company's troops in Uganda, in which the following reference is made to the bark cloth so extensively in use there of which the specimen now in the Kew Museum is an example.

Captain Lugard says, "The fig class [*Ficus*] is largely represented in Uganda, where they are cultivated for the sake of their bark from which the native cloth is made." Thus, although there can be no doubt that the cloth bark used in Nyassaland and much of that used elsewhere, is derived from various species of *Brachystegia*, the subject requires further investigation, and it is most desirable that those in a position to investigate the question on the spot should send the leaf at least of the tree which they have seen used to yield the bark cloth with specimens of the cloth itself.

"The Relations of Mind and Brain." By Henry Calderwood, LL.D., Professor of Moral Philosophy, University of Edinburgh. 3rd edition. (Macmillan, 1892.) 8vo. pp. 551. The object of the work, as stated in the preface to the first edition, is to ascertain what theory of mental life is warranted on strictly scientific evidence. The order followed is to consider, *first*, the latest results of anatomical and physiological research as to the structure and functions of the brain; *second*, the facts in human life unaccounted for by anatomical and physiological science, and requiring to be assigned to a higher nature. On the side of Mental Philosophy, it must be recognised that analysis of consciousness cannot be regarded as affording a complete survey of the facts of personal life. On the other hand, it is clear that the known facts connected with cerebral action do not include familiar phases of mental activity. If we allow ourselves to be engrossed with physiological investigations as to brain, we restrict our attention to a single class of facts, and become unable to take a view of human life as a totality. The whole range of evidence must be traversed, if we are to secure a harmonious representation of the constitution of human nature. The titles of the chapters are:—Relations of philosophy and science; structure of the brain; the nerve system as dependent on the great nerve centre; localisation of functions in distinct portions of the brain; comparison of the structure and functions of brain in lower and higher forms of animal life; results of anatomical and physiological investigations; animal intelligence; personal experience as connected with action of the sensory system; experience as connected with motor activity; retention of acquisition-memory; use of speech; action and reaction of body and mind; weariness, sleep, and unconsciousness; brain disorders; the higher forms of mental activity; summary of intellectual results; hypnotism. The work is fully illustrated and well indexed.

"The Ainu of Japan." By John Batchelor. (R.T.S., 1892.) 8vo. pp. 336. The volume, written by a missionary, originally in the form of letters, contains a large amount of information with regard to the habits and customs of the Ainus. Some of the subjects dealt with are their ornaments, religious symbols, government, ghosts and future life, polytheism, prehistoric times and legends. The work contains eighty illustrations, and is fully indexed.

"Masks, Heads, and Faces," with some considerations respecting the rise and development of art. By Ellen R. Emerson. (A. and C. Black, 1892.) 8vo. pp. 312. The author considers that "The original purposes of the mask were religious and serious. Their object, like the earliest form of the drama, was the manifestation—the incarnation—of the gods. Rite and formula carefully guarded them; reverence for their indwelling 'breath,' animating both mask and wearer, preserved them. Not

until a late period of advanced civilisation in Europe were they deemed unfit for religious spectacle." The work is profusely illustrated.

"**On the Modification of Organisms.**" By David Syme. (Kegan Paul.) 8vo. pp. 164. The scope of the work is defined by the author at the commencement of the first chapter: "After a review of all that has been said for and against natural selection during the last thirty years, Dr. Wallace expresses himself, in his recent work on Darwinism, as having come to the conclusion that this principle 'is supreme to an extent that even Darwin himself hesitated to claim for it.' Notwithstanding the opinion of this high authority, I venture to think there is something to be said on the other side of the question, and I propose in the following pages to show that the acceptance of this theory is still beset with difficulties of a very formidable character. . . . (p. 15). We have seen that Darwin's language is wanting in precision, and his definitions and theories are variable and contradictory. In one place natural selection is the 'struggle for existence'; in another, the 'struggle for existence' is said to bear on 'natural selection'; in a third place he speaks of the 'struggle for existence and natural selection' as if they were independent principles.

. . . The titles of the chapters are: the province of natural selection; the effects of natural selection; the extermination of the unfit; sexual selection; the fertilisation of plants by insects; the causes of variability; the modifying agency.

"**Vocabularies of the Tlingit, Haida, and Tsimshian Languages.**" By Dr. Franz Boas. (Proc. Amer. Philos. Soc., vol. xxix.) 8vo. pp. 35. The vocabularies were collected by the author while studying the Indian tribes of British Columbia under an appointment of the Committee of the British Association.

"**The Origin of Metallic Currency and Weight Standards.**" By William Ridgeway, M.A. (Cambridge, at the University Press, 1892.) 8vo. pp. 417. The work deals very fully with the origin of metallic currency, &c., under the following headings:—The ox and the talent in Homer; primitive systems of currency; the distribution of the ox and the distribution of gold; primeval trade routes; the art of weighing was first employed for gold; the gold unit everywhere the value of a cow; the weight systems of China and Further Asia; how were primitive weight units fixed? statement and criticism of the old doctrines; the systems of Egypt, Babylon, and Palestine; the Lydian and Persian systems; the Greek, Sicilian, Italian, and Roman systems. The author (p. 387) concludes as follows:—"It now simply remains to sum up the results of our enquiry. Starting with the Homeric poems, we found that although certain pieces of gold called *talents* were in circulation among the early Greeks, yet all values were still expressed in terms of cows. We then found that

the gold *talent* was nothing else than the equivalent of the cow, the older unit of barter; and we found that the *talent* was the same unit as that known in historical times under the names of Euboic stater or Attic stater, and commonly described by metrologists as the light Babylonian shekel. Our next stage was to enquire into the systems of currency used by primitive peoples in both ancient and modern times, and everywhere alike we found systems closely analogous to that depicted in the Homeric poems, and we found that in the regions of Asia, Europe, and Africa, where the system of weight standards which has given birth to all the systems of modern Europe, had its origin, the cow was universally the chief unit of barter. Furthermore, gold was distributed with great impartiality over the same area, and known and employed for purposes of decoration from an early period by the various races which inhabited it. We then found that practically all over that area there was but one unit for gold, and that unit was the same weight as the Homeric Talanton. Next we proved that gold was the first object for which mankind employed the art of weighing, and we then found that over the area in question there was strong evidence to show that everywhere, from India to the shores of the Atlantic, the cow originally had the same value as the universally distributed gold unit. From this we drew the conclusion that the gold unit, which was certainly later in date than the employment of the cow as a unit of value, was based on the latter; and finally we showed that man everywhere made his earliest essays in weighing by means of the seeds of plants, which nature had placed ready to his hands as counters and as weights. Then we surveyed the theories which derive all weight standards from the scientific investigations of the Chaldeans or Egyptians, and having found that they were directly in contradiction to the facts of both ancient history and modern researches into the systems of primitive peoples, we concluded that the theories of Boeckh and his school must be abandoned. Next we proceeded to explain the development of the various systems of antiquity from our ox-unit, taking in turn the Egyptian, Assyrio-Babylonian, Hebrew, Lydian, Greek, and Italian. New explanations of the origin of the Talent and Mina, and also of the earlier types on Greek coins, and of the varieties of standard employed for silver by the Greeks were offered; and, finally, in dealing with the systems of Sicily and Italy arguments were advanced to show that the Roman *As* was originally nothing more than a rod or bar of copper of definite measurements, and was in weight and method of division the same as the Sicilian *Litra* and the Greek *Obol*. The work is well illustrated, and there is a full index.

"Russian Characteristics," reprinted with revisions from the "Fortnightly Review." By E. B. Lenin. (Chapman and Hall, 1892.) 8vo. pp. 604. This important work deals with the following points, on which the author has endeavoured to supply

data for enabling the reader to gauge the workings and tendency of Russian autocracy :—The demoralization of the nation. Truthfulness and the mythopathic faculty. The life philosophy of the Russian. Fatalism, improvidence, and hospitality. Procrustination; time not money. Shiftlessness of the people; grandmotherly legislation. Honesty tempered by communism. The ethics of commerce. Prisons. Armenia and the Armenian people. Sexual morality. Finance; the rock of the peasantry. Finland. The Jews in Russia. The famine. The author quotes authorities for his statements very fully, and the whole volume forms a serious indictment of the Russian official system, and of private morality.

"*The Land Systems of British India*," being a manual of the land tenures and of the systems of land revenue administration prevalent in the several provinces. By B. H. Baden-Powell, C.I.E. (Oxford, at the Clarendon Press, 1892.) 3 vols. 8vo. pp. 2102. With maps. The work deals exhaustively with the subject, and will be indispensable to everyone studying the points referred to.

"*Legends and Popular Tales of the Basque People*." By Mariana Monteiro. (T. Fisher Unwin, 1890.) 8vo. pp. 274. The tales given form a valuable addition to our knowledge of the Basque people. A short glossary is also given.

"*Studies in South American Native Languages*," from MSS., and other rare Printed Sources." By Daniel G. Brinton. (Philadelphia, MacCalla, 1892) 8vo. pp. 87. The Tacana language and its dialects, the Jivaro, Cholona, and Lecca languages, a text in the Manao dialect, the Bonari dialect of the Carib stock, the Hongote language and the Patagonian dialects, the dialects and affinities of the Kechua language, affinities of South and North American languages, the dialects of the Betoys and Tucanos. The Chinanteo and Mazatee languages of Mexico.

"*Catalogue of Prehistoric Works*," East of the Rocky Mountains. By Cyrus Thomas. (Smithsonian Institution, 1891.) 8vo. pp. 246. Map.

"*Omaha and Ponka Letters*." By J. O. Dorsey. (Smithsonian Institution, 1891.) 8vo. pp. 127. A special alphabet is used and translations are given.

"*Anthropology, as a Science, and as a Branch of University Education*." By D. G. Brinton. (Philadelphia, 1892.) 8vo. pp. 15. The object of the pamphlet is to suggest a general scheme for instruction in Anthropology.

"*Har-Moad, or the Mountain of the Assembly, a Series of Archaeological Studies chiefly from the standpoint of the Cuneiform Inscriptions*." By O. D. Miller, D.D. (Stephen Whipple, North Adams, Mass., 1892.) 8vo. pp. 445. The author deals with the subject largely from a theological point of view.

"Bibliography of the Algonquian Languages." By J. S. Pilling. (Smithsonian Institution, 1892.) 8vo. pp. 614. The volume deals with 107 languages and is illustrated with 82 fac-similes. "The Algonquian speaking peoples covered a greater extent of country, perhaps, than those of any other of the linguistic stocks of North America, stretching from Labrador to the Rocky Mountains, and from the Churchill River of Hudson Bay to Pamlico Sound in North Carolina; and the literature of their languages is by far the greatest in extent of any of the stocks north of Mexico, being equalled, if at all, by only one south of that line, namely, the Nahuatl."

"Property: its Origin and Development." By Ch. Letourneau, Professor in the School of Anthropology, Paris. (Walter Scott, 1892.) 8vo. pp. 401. The author deals with the subject very fully under the following headings: property among animals, among primitive hordes and tribes, among republican tribes, among monarchic tribes; collective property in Malaysia; property in great barbarous monarchies, in ancient Egypt and in Abyssinia, in China, Japan, and the Indo-Chinese States; among the Berbers, Semites, and Aryans of Asia; in ancient Greece and Rome, in barbarous Europe and under the Fendal system. Inheritance, commerce, debts, and money. The past and future of property. The volume is well indexed.

"The Southern Chins" (Essay on the Language of). By Bernard Houghton, C.S. (Government Printing Office, Rangoon, 1892.) pp. 131 and xx. The work contains valuable anthropological information.

"Siyin Dialect," spoken in the Northern Chin Hills (Manual of). By Captain F. M. Rundall. (Government Printing Office, Rangoon, 1891.) 8vo. pp. 47.

"Haka or Baungshe Dialect" of the Chin Language (Handbook of). By D. J. C. Macnab, B.Sc. (Government Printing Office, Rangoon, 1891.) 8vo. pp. 52.

"The Mide Wiwin," or Grand Medicine Society of the Ojibwa. By W. J. Hoffman. (Washington, Bureau of Ethnology, 1891.) 4to. pp. 152. This extract from the seventh annual report contains a full account of the initiation into the Society, with sixty-one illustrations.

"Monuments primitifs des Iles Baléares." By Emile Cartailhac. (Toulouse, E. Privat, 1892.) 4to. pp. 80. A valuable work, published under the authority of the Minister of Public Instruction, containing 80 plans with 51 photogravure plates $9\frac{1}{2}$ ins. by $6\frac{3}{4}$ ins.

"Is Man too Prolific?" By H. S. Pomeroy, M.D., Leipsic. (Funk and Wagnalls, New York, 1891.) 8vo. pp. 64. The brochure is an answer to the Malthusian doctrine and designed to allay the

fears of those who are troubled about the over-population of the world. The author claims that food is increasing more rapidly than mouths, and the most important factor in the national family and individual weal is that the largest possible number of children should be born.

"**Studies in Psychology.**" By S. G. Burney, D.D., LL.D., Professor of Systematic Theology in Cumberland University, Nashville, U.S.A. (Camb. Presb. Pub. House, Nashville, Tenn., 1890.) 8vo. pp. 535. The author states in the preface: "The more prominent points in which this work radically differs from other works largely accepted as high authority and extensively used as text-books are as follows:—This work endeavours to avoid the perplexity necessarily arising from the very common vice of formally accepting any given analysis of the mind, and then practically disregarding that analysis in attributing to one faculty the functions of another. . . . It also reprobates as false and necessarily perplexing the almost universally accepted doctrine of composite or complex faculties, complex feelings, and complex action. . . . Another characteristic is its rejection of the generally accepted doctrine that consciousness is a cognitive power of the mind. It alleges, on the contrary, that if the Kantian analysis is accepted as true and complete, consciousness must be relegated to the sphere of the sensibility and regarded as a form or species of feeling. It also rejects as untrue and perplexing the conceits of a 'voluntary consciousness,' &c., exercised over the mind by unknown objects. . . . It also rejects the objectivity of time, space, beauty, and sublimity in the form in which these phenomena are generally stated. It differs somewhat from the more common theories concerning identity, also concerning memory and the laws of association or mental suggestion. The doctrine of the sensibility is only briefly discussed."

"**Evolution in Science, Philosophy, and Art. Popular Lectures and Discussions before the Brooklyn Ethical Association.**" (New York, Appleton and Co., 1891.) 8vo. pp. 475. The volume contains the following lectures:—A. R. Wallace, by E. D. Cope; E. Haeckel, by T. B. Wakeman. The scientific method, by F. E. Abbot. Herbert Spencer's synthetic philosophy, by E. F. Underwood. The evolution of chemistry, by R. G. Eccles. The evolution of electric and magnetic physics, by A. E. Kennelly. The evolution of botany, by F. J. Walling. The evolution of geology by J. C. Kimball. Form and colour in nature, by W. Potts. The evolution of optics, by L. A. W. Alleman. The evolution of art, by J. A. Taylor. The evolution of architecture, by J. W. Chadwick. The evolution of sculpture, by T. Davidson. The evolution of painting, by F. P. Rundell. The evolution of music, by Z. S. Sampson. Life as a fine art, by L. G. Janes. The doctrine of evolution: its scope and influence, by J. Fiske. Before each lecture a valuable list of "Collateral readings suggested" is given, and the work is well indexed.

"The Hibbert Lectures, 1891." Lectures on the origin and growth of the conception of God; as illustrated by anthropology and history. By Count Goblet D'Alviella, Professor of the History of Religions at the University of Brussels. (Williams and Norgate, 1891.) 8vo. pp. 296. The titles of the lectures are: On methods of research into the prehistoric manifestations of religion. The genesis of the idea of God. Polydemonism and polytheism. Dualism. Monotheism. The future of worship as deduced from its past.

"Christian Anthropology." By John Thein. (New York, Benziger Brothers, 1892.) 8vo. pp. 576. The author, a priest of the Roman Catholic Church, thus defines the object of the work: "Christian Anthropology embraces the entire man, the soul as well as the body. It notes the great difference between man and beast; it considers his intellectual and moral qualities as well as his anatomical and physiological characters, and therefore man's origin, nature, place in creation, antiquity, unity, immortality, future life." The titles of the chapters are: Origin of life and its development; Darwinism and monism; origin of man; man and beast; the state of primitive man; the antiquity of man and Biblical chronology; the antiquity of man and geology; the antiquity of man and the chronologies of India, China, Egypt, and Chaldea; the unity of the human species; specific unity of mankind; the Deluge and the traditions of mankind; geology and the Deluge; causes of the Deluge; answers to objections; man's component elements; the existence of the soul; the immortality of the soul and its future life. The volume may be taken as a text-book of the views of the Roman Catholic Church on the science of Anthropology.

The Universality of Man's Appearance and Primitive Man. By E. L. Anderson. (Edinburgh, D. Douglas, 1891.) pp. 28.

Sacred Books of the East. The *GRIhya-sūtras*, rules of Vedic domestic ceremonies, translated by H. Oldenberg. Part 2. (At the Clarendon Press, 1892.) 8vo. pp. 376.

"Sea Phantoms; or, Legends and Superstitions of the Sea and of Sailors." By F. S. Bassett. (Chicago, Morrill and Co., 1892.) 8vo. pp. 505. The work deals fully with a large number of sailors' folk-tales and customs. It is well indexed and illustrated.

"Sex and Life." By E. F. Brown, M.D. (Chicago, Schulte and Co., 1891.) 8vo. pp. 142. The work deals in a popular manner with the physiology and hygiene of the sexual organisation.

"Ideale Welten in Wort und Bild." Von A. Bastian. 3 vols. (Berlin, Felber, 1892.) These volumes of anthropological

notes by the Director of the Museum of Ethnology at Berlin are based on investigations during his journeys in India, made for the purpose of adding to the magnificent collections under his charge. The ideal worlds of the title are those imagined in the Hindoo cosmogonies and theogonies, especially among the Jains, whose sacred books are as yet so imperfectly known to students in comparison with those of the Brahmins and Buddhists. The voluminous citations of these volumes are hardly adapted to the reviewer's treatment; but a good idea of Professor Bastian's scope and purpose may be gained from inspection of the illustrations, with reference to the explanations and related documents in the body of the work. In the first volume we have the detailed plan and explanation of the Brahmanic universe, with its multifarious heavens and hells, followed by a Buddhist universe, and again by the Jain system—all obviously related in origin, though worked out into variety. The representations of the central mount, Meru, and of the Jamba tree, belonging to the latter system, are remarkable. The frontispiece represents the mountain of Samet Sikkha, the sacred pilgrimage resort of the Jains, who approach it nowadays by the railway train shown at the foot of the picture. In vol. ii are episodes of the divine history. Mahavira (Bhagavat) receives the homage of the elephant and snake, and Gautama is being converted to his doctrine. Mahavira is suffering the nailing of his ear by the cowherd, and is afterwards cured of his injuries. The Jain hells exhibit their various tortures, as pendants to which Professor Bastian introduces the circles of the Inferno. Not the least curious pictures are those of the world as Biblically conceived by an Evangelical pastor named Frisch, whose book was printed in 1747, with diagrams of the most solid of firmaments. In vol. iii, the diagram of the elemental destructions of the world is to be noticed. In view of the bearing of the study of Jainism on that of the other religions of India, the documents recorded here respecting it by a writer of such wide-reaching comparative knowledge may be expected to promote the solution of the intricate problems involved.—[E. B. T.]

"The Ulu; or, Woman's Knife of the Eskimo." By Otis T. Mason. (Smithsonian Institution, 1892.) Svo. (20 plates.)

"La Bijouterie Caucasiennes," de l'époque Seytho-Byzantine, by E. Chantre. (Anthropological Society of Lyons, July 2nd, 1892.) The paper is very fully illustrated.

"L'Anthropologie," vol. iii, No. 1. Memoir of A. de Quatrefages, with list of his works. Notes on the filling up of caves, by Marcellin Boule, with plates. General considerations with regard to the connection between various anthropological characteristics, by Dr. Collignon. The ethnological position of the people of Ferghana, by Paul Gault, with plan. No. 2. The ancient monuments of the Khmers in Annam and Tonquin, by Ch. Lemire. The Tjames ruins of the province of Quang-Nam (Tourane), by M. C.

Paris. Skulls from the Phoenician necropolis of Mahdia (Tunis), by R. Collignon. No. 3. Tertiary primates and fossil man in South America, by Dr. E. Trouessart. Skulls of educated persons as compared with those of peasants. *Notre Dame de Londres* (Hérault), by G. de la Pouge.

"*The American Anthropologist*," vol. v, No. 1. Siouan Onomatopes, by J. O. Dorsey. A few Tusayan pictographs, by J. W. Fewkes. Aboriginal geographic names in the State of Washington, by M. Eells. Notes on the Chemakum language, by Franz Boas. Dances of the Hupa Indians, by C. E. Woodruff. Improved Cherokee alphabets, by J. Mooney. A Kiowa Mescal rattle, by J. Mooney. Studies in aboriginal decorative art, by W. H. Holmes. Quarterly bibliography. No. 2. The Lá-lá-kón-ta, a Tusayan dance, by J. W. Fewkes and J. G. Owens. Legend of the founding of the Iroquois league, by J. B. N. Hewitt. Studies in aboriginal decorative art, by W. H. Holmes. Early Blackfoot history, by G. B. Grinnell. Materials, apparatus, and processes of the aboriginal lapidary, by J. D. McGuire. Quarterly bibliography. No. 3. The law of torture; a study in the evolution of law, by J. C. Welling. The Mamxraú-ti; a Tusayan Ceremony, by J. W. Fewkes and A. M. Stephen. The nomenclature and teaching of anthropology, by D. G. Brinton. The Villard-Bandelier South American Expedition, by F. H. Cushing. Bibliography.

"*The American Antiquarian*," vol. xiv, No. 2. The mound builders and the mastodon, by S. D. Peet, illustrated. New discoveries in Tennessee, by G. P. Thurston. No. 3. The cliff dwellings of the cañons of the Mesa Verde, by W. Birstall, illustrated. Pre-Columbian discovery of America, by J. P. MacLean. The "Old fort" of Saline county, Missouri, by T. H. Lewis. No. 4. The pre-Columbian discovery of America, by J. P. MacLean. Idols and images, by S. D. Peet. The ancient inscription at Chatoto, Tennessee, by A. L. Rawson.

"*Revue Mensuelle de l'Ecole d'Anthropologie de Paris*," vol. ii, No. 1. Poisoned arrows from Surro (Upper Niger), by J. Laborde. Division between the paleolithic and neolithic periods, by P. Salmon. No. 2. Prehistoric summary, by G. de Mortillet. No. 3. The races, peoples, and languages of Africa, by A. Lefèvre. The cephalic index in France during the neolithic period, by G. Hervé. No. 5. Course of prehistoric anthropology. No. 7. Course of ethnology. No. 8. The origin of literature, by C. Letourneau. The skulls of l'Aveyron, by Ab. Hovelacque and G. Hervé. The human skeleton of Gravenoire, by F. Pommerol.

"*Archæological Journal*," No. 193. Prehistoric stonework of Mexico, by O. H. Howarth. Some flints from Egypt of the Fourth dynasty, and notes on early sickles, by F. C. J. Spurrell.

"*The Journal of the Royal Society of Antiquaries of*

Ireland, vol. ii, Part 1. Old place-names and surnames, by Miss Hickson. An urn burial on the site of Monasterboice, county Louth, by Rev. L. Hasse. On a newly-discovered site for worked flints in the county of Down, by W. H. Patterson. Part 2. On two rare stone implements found at Lough Gar, county Limerick, by J. F. M. French. Recent finds in the county Antrim, by W. J. Knowles.

"**The Journal of Mental Science**," April, 1892, contains a review of several important works on criminal anthropology, by Havelock Ellis.

"**Folk-Lore**," vol. iii, No. 1. The Lai of Eliduc and the Märchen of little Snow-White, by A. Nutt. Magic songs of the Fianna (4), by Hon. J. Abercromby. Guardian spirits of wells and lochs, by Rev. W. Gregor. Manx folk-lore and superstitions (2), by Professor J. Rhys. Folk-lore tales of Central Africa, by Rev. D. Elmslie. No. 2. The sin-eater, by E. S. Hartland. Samoan tales (2), by Hon. J. Abercromby. Divination among the Malagasy, by Rev. J. Sibree. "First-foot" in the British Isles, by Professor Rhys and T. W. E. Higgens.

"**Lancet**," August 13th. The place of anthropology in medical education, by Havelock Ellis, L.S.A.

"**Journal of the Asiatic Society of Bengal**," vol. lx. Part I. No. 2. Report on the Boris or Lakha Medi Stupa, near Junagadh, by H. Cousens. Notes on some Kolarian tribes, by W. H. P. Driver. Place-names and river-names in the Darjiling district and Sikkim, by L. A. Waddell. Vol. lxi, Part I, No. 1. Lamaic rosaries, by L. A. Waddell.

"**The Journal of the Anthropological Society of Bombay**," Vol. ii, No. 7. On the funeral ceremonies of the Parsees: their origin and explanation, by J. J. Modi. On the use of turmeric in Hindoo ceremonial, by W. Dymock. Vatsayana on the duties of a Hindoo wife, by P. Peterson. On the use of Ganja and Bhang in the East as narcotics, by W. Dymock. Tables of caste measurements.

"**Journal of the Ceylon Branch of the Royal Asiatic Society**," vol. xii. A history of the ancient industries of Ceylon, by G. Wall. A contribution to Sinhalese plant lore, by W. A. de Silva.

"**The Scottish Geographical Magazine**," vol. viii, No. 8. The migrations of the races of men considered historically, by James Bryce.

"**Transactions of the Royal Society of Canada**." (29th May, 1891.) The Beothuks or Red Indians of Newfoundland, by Rev. G. Patterson.

"**Science**," July 22nd, 1892. Key to the Maya Hieroglyphs, by Cyrus Thomas. Illustrated.

THE JOURNAL
OF THE
ANTHROPOLOGICAL INSTITUTE
OF
GREAT BRITAIN AND IRELAND.

APRIL 26TH, 1892.

EDWARD B. TYLOR, Esq., D.C.L., F.R.S., *President, in the Chair.*

The Minutes of the last meeting were read and signed.

The election of His Grace the Duke of DEVONSHIRE, and of H. COLLEY MARCH, Esq., M.D., was announced.

The following presents were announced, and thanks voted to the respective donors:—

FOR THE LIBRARY.

- From the AUTHOR.—Notes on the Nature of the Geological Record.
By T. V. Holmes, F.G.S. 8vo. 1890. pp. 28.
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Professor R. K. DOUGLAS read a paper on "The Social and Religious Ideas of the Chinese, as illustrated in the Ideographic Characters of the Language."

Dr. E. B. TYLOR, Mr. R. H. PTR, and Mr. A. L. LEWIS joined in the discussion, and the Author replied.

Mr. JOSEPH OFFORD, jun., read a paper on "The Mythology and Psychology of the Ancient Egyptians."

The SOCIAL and RELIGIOUS IDEAS of the CHINESE, as ILLUSTRATED in the IDEOGRAPHIC CHARACTERS of the LANGUAGE

By Professor R. K. DOUGLAS, M.A.

[Read 26th April, 1892.]

The Chinese as Painted in their Ideographic Characters.

In addressing this Society on the ideographic characters of the Chinese, it is hardly necessary that I should call to mind the fact that the first form of written character known to the Chinese was, as was the case with the Egyptians and other peoples of antiquity, that of hieroglyphics. Unlike the Egyptians, however, who advanced through the various stages of hieroglyphics, ideographs, and phonetics, to syllabic and alphabetical writing, the Chinese stopped short at the phonetic stage. They are, if I may use the expression, an immature people, and just as their eyes are infants' eyes, so far as the absence of the caruncula lachrymalis and the heavy fold of the upper lid are concerned, and their cheeks, the smooth cheeks of young boys, so their written characters represent an arrested stage in the mental development of the people.

When we first hear of the Chinese in China, we find them in possession of the three forms of the character which I have mentioned, and beyond these they have not advanced. If it were not proved beyond cavil that the Chinese were emigrants from a centre of civilisation in Western Asia the one fact that no inscription in the hieroglyphic character is known to exist

in China would point to the conclusion that, at all events, their writing had passed out of the purely hieroglyphic stage before they reached their present habitat. Indeed, the hieroglyphics which are found in the writing, bear traces of having been modified and restored from characters which had lost their original forms. The tendency towards hieroglyphics has always been present in the Chinese mind, and in the early reform of writing there was exhibited an inclination to recognise pictures of objects in characters which had virtually ceased to be hieroglyphics, and to reconstruct them in that earlier form.

As was natural, the objects of Nature were those which formed the earliest hieroglyphics. The sun and the heavenly bodies generally, the physical features of the earth, man and the beasts which walk on it, birds which fly above it, and fishes which swim beneath it; all found pictorial expression on paper. A number of these are still preserved in the writing, as for example

$$\odot = \text{日}, \quad) = \text{月}, \quad \text{山} = \text{Shan}, \quad \text{目} = \text{Muh}$$

Jih, the Sun. Yueh, the Moon. Shan, a Mountain. Muh, the Eye.

But it is obvious that these must soon have been found insufficient for the wants of a people who like the Chinese developed at an early period a taste for literature. For the expression of an idea something more was wanted than the drawing of an object, and so they invented a class of compound symbols composed of two or more hieroglyphics to serve as ideographs. For example to express the idea of "brightness" (明) they combined "the sun" (日), and "the moon" (月). Later again when they found that a still more extended system was necessary they, like the Egyptians, adopted certain characters as phonetics, and used them to express sounds only, quite irrespective of either their hieroglyphic or ideographic values, although in many instances it is easy to recognise ideographic values in a number of characters which are commonly classed as phonetics. For example we have the word *Ching* 京 meaning "great," "exalted," "the capital," &c., and it is easy to imagine how this word would be applied to large and eminent objects. Thus brilliant sunlight was called Ching, a whale was called Ching, and great strength was called Ching. But it was obviously necessary to differentiate on paper, the characters by which these words were represented and so they wrote 日 the sun above 京 for "brilliant sunshine", put a fish 鱼 at the side of 京 for a "whale" or great fish, and combined strength with 京 to express "great strength."

In some few instances again under the influence of Buddhist

writers they spelt the words in accordance with the system imported into China from India to express proper names—that is to say, in order to indicate a desired word they chose two symbols, the first of which supplied the initial sound, and the second the final sound. Thus they wrote the word 嫣, Niang, by the amalgamation of the two symbols Nu (女) and liang (良) = (嫗) Niang.

But though the formation of the Chinese hieroglyphics and phonetics is doubtless of great linguistic moment, there is in the ideographs an additional element of interest which is worthy of attention. In them we have mirrored before the eye the ideas of their inventors on every subject known to them. The qualifications of a ruler, the constituent elements of a nation, as well as the religious, social and scientific notions of the people are so pictured and delineated that he who runs can read when once the key to the decipherment of this form of the writing is applied to it. With the light thus thrown upon them, the symbols which at first sight seem so complicated and unintelligible become living and lively records of the nation's history, and supply a truer and more certain index of the national characteristics than can often be obtained by a knowledge of the people themselves.

These ideographs are to the eye what our compound words are to the understanding. They place on record the views of their inventors, as words reflect the ideas of those who coin them; and like words they have been invented as the occasions for their existence have arisen. Like words also they owe their acceptance to the recognition of the aptness with which they represent the required ideas. We all know instances of words which have been launched into the world with authority, and which have never passed into circulation, and again words which have won their way into universal use by their fitness for the ideas desired. In the same way we may assume that when ideographic characters have been fully accepted by the people, they have justified their existence by the propriety of their composition. As I shall have occasion to point out, a number of these characters have in their present shapes deviated from the original forms which are preserved in the dictionaries of the Archaic characters. But this strengthens the idea that the newer forms represented the prevailing ideas of the people more accurately than the ancient shapes did, since so conservatively-minded a people as the Chinese would only adopt a change in their writing which approved itself to their understandings.

The characters which I shall quote this evening are all of respectable antiquity—that is to say, there are none of later

adoption than the early centuries of our era, and many have their origins many hundreds of years before Christ. Many of them are explained by the native etymologists in the sense in which I am about to lay them before you. To some, however, it is necessary to give the explanation which their forms plainly suggest, since the Chinese seem to be incapable of realising the fact that in past ages other states of society existed than that now known to them, and also since their pride forbids them to associate the formation of their characters with anything related to any other people than themselves. In literature an illustration of the first of these remarks is furnished by the case of the *Yih king* or "Book of Changes," the earliest book of the Chinese which has been a perennial puzzle to every generation of native scholars who have attempted to explain it from their existing standpoints, and the true meaning of which has been revealed by Professor De Lacouperie, who has discovered in its pages traces of syllabaries such as are found in ancient Accadian syllabaries, many of which doubtless came into the possession of the Chinese before their advent into China. As an example of their disinclination to recognise references to non-Chinese people in their characters, I may point to the character for iron, a metal which, as the same scholar has recently shown, was originally brought to the knowledge of the Chinese by native tribes, and which was consequently represented on paper by a character signifying "Barbarian," "metal," 夷金 = 鎏.

If then we take, for example, the character or symbol used to represent the emperor, we find that it is a compound of two parts meaning "self" (自), and "ruler," (王), and thus signifies "ruler of one's self." This primary qualification of the Emperor is in accordance with the generally conceived idea which was first formulated by Confucius that before a man can rule a state he must be able to rule a district; before he can rule a district he must be able to rule his family; and before he can rule his family he must be master of himself. By a clerical error in the character now in use, oneself (自), has been converted into "white" (白), and the symbol in its present form means "white ruler." This symbol 白 which it will be observed differs only from 日 "the sun," by the stroke above it, is, as has been pointed out by Mr. Ball, a relic of the old Accadian writing of Chaldea, in which script the same character is used for both "sun" and "white," the first being pronounced *Ud* or *Ut*, and the second *Ber*, *Barbar*. The Chinese have preserved these sounds in *Jit* anciently *Nit*, and *Pai*, anciently *Pak*, *Bak*, for the two words, and have differentiated the characters by the stroke referred to.

The kingdom over which a "ruler of himself" should hold sway is one which must have a well defined frontier and must at all times be prepared to resist its foes. These were plainly the ideas of the inventors of the character for "kingdom" (國), which is made up of 口, a frontier, 人 "men," lit. "mouths," and 戈 "weapons," and which has reference to a time before the firm establishment of the empire, when there were fightings within and without, and when it was only by his strength in the field and the metal of his weapons that the sovereign held his own against his enemies. The 口 "frontier" is used for smaller enclosures, and so we have 禾, "grain" in an enclosure *ch'iu* 國, to mean a granary, or "a pig" (豕) in the same position to mean "a pigsty," *kuan* 國.

If we knew nothing of the domestic architecture of the Chinese we should expect to find from the character for a house (屋), that on entering the front door we should be landed in a courtyard; for it shows us that within the 戸, "door," is a 方, or "square space." This exactly represents the style in which every house in China of any pretensions is built. On passing through the doorway one steps into a courtyard, and if the owner be a man of wealth the probability is that there will be one more courtyard at least before that enclosure is reached which is devoted to ladies of his household. This last arcane retreat is depicted on paper by a 壆 "sceptre," standing at a 門 "folding door" (闔), and emblematises the authority which forbids all to enter but the holder of the rod of power. It is characteristic of the ancient civilisation of China that houses or parts of houses enter so largely into the ideographic writing. The door is very commonly so used. An ancient hieroglyphic was that shown above in the compound symbol for house, and which shows us a single door. At possibly a later time folding doors came into use and the hieroglyphic (門), superseded in common usage the more ancient form, 戶. A Chinese folding door is commonly composed of open latticework in the upper portions, and of solid wood beneath. The first part of this description is depicted in the character, the rest being left to the imagination, or it may be that in the first instance there were more screens than doors, a space being left beneath for the passage of the smaller animals.

The position of a servant or other person asking a question would appropriately be at the folding door, and so the Chinese represent the verb "to enquire" by a mouth (口) in the doorway (問). A less appropriate position for a listener is at the same opening. But in China, as elsewhere, eavesdropping is one of the commonest forms of listening, and recognising the fact, the inventors of writing adopted an ear (耳), at the opening of

the door as a fitting symbol for "to hear" (聞). In the same way the chink in the folding door is made obvious by the rays of the sun shining through it, and therefore the sun (日), in the doorway is accepted as a descriptive symbol for "a crevice" (隙); while "a heart" (心), confined within a doorway (閨), symbolises the melancholy of seclusion.

In the character, 閏 *Jun* "an Intercalary Month," we have preserved the record of an ancient and interesting custom. In ancient times it was provided that during the intercalary months any person who had a wrong to complain of might have free access to the sovereign, and in order to make the ruler more easily accessible, it was customary for him to sit in the gateway of the palace where he received the petitions of his aggrieved subjects. Hence the adoption of this compound which is made up of 王, a king at a gateway to signify the month when the king sits in the gate.

"A roof" (家) is also a common component part of ideograms. The idea of "rest" or "quiet" is exemplified by "a woman" (女) under her domestic roof (家). It was a saying reverenced among the Chinese that a woman should never be heard of beyond her home, and as this idea is still preserved the symbol is singularly appropriate—at least in China where women are yet in much the same untutored state as that enjoyed by Turkish ladies when Byron wrote:—

"No chemistry for them unfolds its gases;
No metaphysics are let loose in lectures;
No circulating library assemblies
Religious novels, moral tales and strictures
Upon the living manners as they pass us;
No exhibition glares with annual pictures
They stare not on the stars from out their attics,
Nor deal (thank God for that!) in mathematics."

In lands further west where the platform and class rooms are the chosen fields of female enterprise, some other symbol, if required, would have to be invented; as in such circumstances the character in question might readily be understood to mean "a rare occasion." One of the earliest characters for a house was one composed of "to arrive at" (至) "a roof" (家). At a later period a character was adopted which bears traces rather of life among the non-Chinese tribes of China than of the Celestials themselves. On the borders of Yunnan and Tibet the Lolas and Kachyens more often than not share their homes with their pigs, cattle and poultry. It is to this style of living that the character for "a household" now in use seem to point, composed as it is of "a pig," shi (豕) under a roof (家), a character which the etymologists tell us was originally written with three men instead of the pig.

But the centre of every household is the family altar, which being the supreme domestic authority is very suitably used to represent "a lord" or "master" (主). This, we are told by the native authorities, represents a candlestick with the flame of the candle; its meaning and shape, however, both seem to indicate that it is rather intended for an altar. It is round the altar that the family congregate and so "a man" (人) standing by it (住) is the symbol chosen to express the verb "to dwell." Some idea of the estimate in which men are regarded may be gathered from the part played in compound characters by the symbol for man (人), in composition. We learn from it that his word should be as good as his bond, since a man's words (信), are the equivalent of "sincerity" and "truth." Etiquette also which so largely enters into the life of Chinamen finds its expression on paper in a compound made up of "man" (人) and "right" (義), that is "that which is right and proper for man" (儀). A man's (人) sceptre (主) is that which is "beautiful," "superior," and "excellent" (佳), while many of the characters in which the symbol for "man" appears are truthfully descriptive of his conditions and occupations. "A man" (人) combined with "spring-time" (春) appropriately suggests "one in the enjoyment of early life" (少春); while "an estate," *yeh* (業) "man" (人) can be none other than "a vassal" *Puk* (僕). Benevolence (仁), or the exercise of humanity between man and man is represented by two (二) men (人). On the principle also that happiness is born a twin; a "companion" (伴) is half (半) a man, (人) and "to aid," "to help" (佑) is a man (人) on the right hand (右).

The Chinese estimate of women as drawn in their writing is not complimentary. Following in the footsteps of their philosophers Chinamen have learnt to regard women with some disdain and in ignorance of the good that is in them to credit them with much that is evil. The character now in use for woman (女) is a corruption of the Accadian hieroglyph meaning the same thing. When we have two women together (姦) *Nan*, the compound is intended to convey the meaning of "to wrangle," an idea which occasionally enters into occidental as well as oriental life. As an instance of this I might quote a story told me by a barrister, who said that when he took his chambers the porter of the inn asked that his wife might be engaged as his laundress. "All the gentlemen on the staircase employ my wife," he added, "and if you were to bring in another woman, I would not answer for the consequences." The addition of a third woman *kien* (姦) makes the symbol for "to intrigue," and in confirmation of the idea conveyed by these characters, we find the compound composed of (女), "women," (姦) "together," means "to suspect," "to dislike," "to loath."

"Women" in company with "four hands" (羣) are very suggestive of the "noise of strife and scolding" (羣) *chok*, as well as of a more actively combative action; while a woman at the foot of two trees, *lan* (婪) stands for "desire" and "greedy"—a combination which reminds us of the unfortunate failing of the mother of us all.

Certain inventors of writing who had less jaundiced ideas on the subject of women than others thought that a "natural" (精) "woman" might well stand for "propriety exhibited in a retiring demeanour." A less complimentary sense is conveyed by the character for "disobedient" (娼) which is composed of "after the manner of" (若) "a woman" (女).

But though the Chinese contemn the weaker sex they have preserved in their writing a record of the time when women were rulers, and when, as is still the case in parts of Tibet and Mongolia, it was in them and not in the man that the people recognised the authors of their being. "A clan" or "family" (姓) is that which is "born" (生) of "a woman" (女). In the earliest form this character was composed of *muk*, an eye, and *sheng*, to be born. Later the character of *muk*, mother, was substituted for the eye, and the compound character read, born of a mother, and later still the present form was adopted.

In common conversation, with that curious habit of naming things indirectly which is so marked a characteristic of the Chinese, a man frequently speaks of his wife as "my basket and broom," and this idea occurs in the usual compound for a wife (妻) which shows us a woman and "a besom," *chow*, 婦. When a man marries *ch'ü* (娶) he is said "to take" "the woman" (女) by "the ear" (耳) after the manner described in the ancient *chow li* or chow ritual, of either bringing in the left ears of prisoners captured in war or, as was undoubtedly practised, of bringing them in by the left ear, and thus preserves an interesting record of the primitive custom of marriage by capture. The native lexicographers tell us that this character was originally written without the woman, and meant therefore only "to take the ear," "take by the ear," which is still the common character for "to take." When, however, it was intended to mean to take a woman in marriage, the character for woman was added for the sake of distinctness. It is interesting to find that the combination of a hand with an ear occurs on some Greek gems which are to be seen at the British Museum, and which are further inscribed with the word *μημονεύει*. This has evident reference to the custom mentioned by Horace (Book I, Sat. IX.), of engaging a witness to bear testimony to a summons by touching his ear, when, as the commentators tell us, it was customary to add the word "Memento," in reference to a

tradition preserved by Pliny that the seat of memory was in the lobe of the ear. This explanation appears to be very far fetched, and it is more probable that the custom was a survival of an old habit of bringing witnesses into court by the ear. In China proper the custom prevalent in many parts of sending a company of men to bring away the bride at evening is doubtless a relic of the same practice, while among the Lolas and Kachyens on the western frontier of the empire, a mimic attack and capture of the bride forms part of the marriage ceremony. In accordance with the same idea of capture "a slave" (奴) is depicted by "a woman" (女) and "a hand" (又), and the debasing result of slavery on the disposition of its victims, is shown in the character for "anger," - "passion" (怒) which is compounded of "a slave's" (奴) "heart" (心). Chinese slaves being commonly prizes taken in war are generally people of foreign tribes. Their language, therefore, would be unintelligible to their captors, and hence the description of "unintelligible gibberish," 言 (讖) by the symbols for "slaves," (奴), "talk" (言). In this connection it is curious to find that "flint arrow heads," 石 (砮) are called "slaves," (奴) "stones" (石) evidently referring to the fact that it was mainly through contact with men of uncultured tribes that the Chinese became acquainted with these implements. It is a curious fact that though stone axes are not uncommonly found in China stone arrow heads are extremely rare. The dictionaries add that the flints from which the slave stone arrow heads are made are found in the neighbourhood of the Amur.

If we desire to know what was the manner of life of the inventors of the ideograms we are forced to acknowledge, that though at the present time the people are settled, and agricultural, there must have been a period when they were pastoral. It is now some years since Professor Terrien de Lacouperie brought forward conclusive evidence to show that the Chinese came into China from the region on the north of the Persian Gulf, and lately Mr. Ball, of Lincoln's Inn, has advanced the theory supported by overwhelming testimony that the Chinese are the successors of the Accadians of the country pointed out by Professor Terrien de Lacouperie. The Accadians were originally, as their name signifies, "highlanders," and we know that subsequently they peopled the plain country of the Euphrates. Their primitive nomadic occupations were thus exchanged for the more settled life of dwellers in the plains, and it is especially interesting therefore to find references to a pastoral past among the Chinese, who throughout their recognised history have been a purely agricultural people. Sheep being the animals which would naturally be herded on

the highlands of Central Asia, we should expect to find the hieroglyphic for sheep, 羊, largely used in compound ideographic symbols. And this proves to be the case. A race of shepherds would naturally regard a "large" (大) "sheep" (羊) as synonymous with that which is "beautiful" or "excellent"; and an owner of a fold would consider his "sheep" as representing that to which he has an "equitable right." This was at least in accordance with the ideas of the coiners of the Chinese symbols, who tell us that sheep being the first of the "six animals" was chosen to represent with 大, "great," the idea of what is beautiful (美). Again the character for "right" "equity" (義) is composed of parts signifying "my" (我) "sheep" (羊), while a rank, fetid odour is expressed on paper by three sheep (羣) shan grouped together. In highland tents the main subject of discussion would be about the ownership of flocks, and so we find that "to talk about" (言) "my" (我) "sheep" (羊) is the equivalent of "to discuss" (議). In the same way the idea of "to nourish" (養) was from the attention necessary to find food for sheep, represented on paper by "to feed" (食) "sheep" (羊). Again water would be a constantly recurring difficulty, and any large pond or lake such as that one (Tengis), so graphically described by De Quincey in his "Flight of a Tartar Tribe," would be called a "sheep water" (咩). This is the term applied by the Chinese to any large expanse of water, more especially at the present time to "an ocean." The nomad Ch'iang tribes on the western frontier are still described on paper by the symbols (羊) yang, sheep, (几) jin, men.

On the other hand traces of agricultural life are very commonly to be recognised in the ideographs. "A man" (男) for example is the "strength" (力) of the "field" (田), and as in an agricultural country, the boundaries most commonly in evidence would be those between the fields, so we find that lines drawn between "fields" (田) is the common ideographic representation of "a boundary" (畝). In the sign language of the North American Indians, Autumn is indicated by falling leaves, the natural feature of that season in a forest country; but among the Chinese, Autumn is associated with the harvest, and thus we have "heat" or "fire" (火) combined with "grain" (禾) to signify the third season (秋). From the crops of the harvest thus ripened the farmer naturally looks for his "profit," and so it was considered appropriate to write "profit" (利) by the symbols for grain (禾) and "knife" or "sickle" (刀).

With the barns full, the act of weighing would be associated with measuring their contents, and this idea was evidently in the minds of the inventors of the symbol for "to weigh" (秤) which is compounded of the characters for "to equalise" (平)

"grain" (禾). Debts, at least in the early days of civilisation, were commonly paid in kind. A North American bridegroom buys his wife with so many horses, a Tibetan shepherd pays his bills in sheep, and agriculturists satisfy their creditors with the produce of their fields. Chinese farmers were, at all events at one time, in the habit of doing so also, as is made plain by the character for "to hire" or "to rent" (税) which signifies "to exchange" (兌) "grain" (禾).

In the earliest notices which we have of the Chinese, we find that they were worshippers of definite objects of adoration. The Emperor Shun, who is said to have reigned more than two thousand years before Christ, sacrificed, we are told, to Shang-ti, and to "Six honoured ones," as well as to the gods of hills and rivers. Sacrifice was a prominent feature in the act of adoration, and at the present time animals are annually offered up on the altars of the non-Buddhist deities. Thus the character for ritual (禮) *Li*, is composed of the symbols (丩), for "worship," or "the spirit of the land," and (皿), a sacrificial bowl, while "to pray" (祈), is made up of the characters for "to worship" or "the spirit of the land" (丩), and "a hatchet" (斤). Like the Israelites of old the Chinese were in ancient times more commonly in the habit of looking to their gods for protection from earthly enemies than from spiritual foes, and so "the spirit of the land" (丩) on one's "right hand" (右), was recognised as symbolical of "to protect," "to defend" (祐); while the same deity (昌), with "a wry mouth" or looking "askance" is synonymous with "evil," "misery" (禍). The universal craving for long life which is regarded as one of the highest earthly blessings, finds expression in the symbols employed for "to pray for" which is composed of "to worship" (丩), and "longevity" (壽).

Turning for a moment to the objects of nature we find that the stars (星) are, in the present form of its character, pictured as "born of" (生) "the sun" (日). The old form of this character

was , or three suns above the earth but the more modern

idea as in the case of 姓, "a tribe" above referred to, seems to have suggested the change in form. The symbol used for the East which (as Professor Terrien de Lacouperie has shown) was originally derived from a Chaldaean character, is in its later form (東), "the sun" (日), shining through "a tree" (木).

Following out the same idea the symbol for "clear," "high in the sky," is the sun above a tree (杲), and "dark," "obscure" is the same combination in reversed relations (杳).

Like the North American Indians the Chinese represent "a forest" by a repetition of the symbol for "tree" (林).

According to Chinese ideas the heart is the seat of the emotions. From it proceed "love," "joy," "hatred," and all the passions. "Man's nature" (性), is therefore "born of" (生). "his heart" (心), and "the feelings," "the desires" (情), are the "natural colour" (青) of the "heart." The Chinese, like all the nations of antiquity, made some confusion between the colours blue and grey. The Egyptians we know used Uat, as the Greeks used γλαυκός for both colours, and the Chinese explain the apparent confusion by saying that the word symbolised by 青 means the "colour of nature." Hence "pure," "clean" (清)—the term used for the present Manchu dynasty—is written as "the natural colour" (青), of "water" (水). A "spring" (泉), is "white" (白) "water" (水), and "the fountain head," the origin of anything (原) is a "spring" (泉), under a "cliff" (山). But to return to the heart; "patriotic," "faithful" (忠), is a "central" (中), "heart," (心), that which is not to be turned either to the one side or to the other. With us "to be afraid" is in common parlance "to be white-livered," but in Chinese it is to be (怕), "white-hearted." Another symbol for "timorous" (怯), is the heart (心), "going" or "fluttering" (去), which is the exact counterpart on paper of the pantomimic action by which the North American Indians express the word—namely, by touching the heart and making a trembling motion of the hand above it. The same people express "to forget" by touching the heart and making the sign for "no," and "to dislike" by indicating the heart and turning the head on one side. The Chinese preserve the same ideas in their characters, that for "to forget" (忘), being made up of "the heart" (心), and "dropped" or "lost" (亡), and that for "to dislike" (怨), "the heart" (心), and "to turn away" (怨).

Equally with the feelings, all mental energy is derived from the heart. "To think" (念), is "to be present" (今), "hearted," and "to be idle," "remiss" (怠), is "to lift" (台), "the heart." A very expressive sign for "to pity" (恤), is the heart's (心) "blood" (血). "To feel shamed" or "to blush" (恧), is represented by the "ear" (耳), and "heart" in reference to the fact that the ear reddens at the sense of shame.

The Chinese are probably the most peaceable nation upon earth. They quarrel abundantly, but very seldom do their quarrels end in any outbreaks of violence. The use of the fists is almost unknown, and the form which inexpressible anger commonly takes is to shout abuse at one another, or if this fails to satisfy the burning zeal of the angry disputants, a last resort is to seize each other's pig-tails. Being essentially a nation of shop-keepers, the market-place is commonly the scene of strife, and thus "to wrangle noisily" and "to make a disturbance" (鬧), is "to quarrel" (鬥) in "the market place" (市).

But in proportion to the rarity of personal violence on occasions of quarrel, appeals to the law courts are of common occurrence. There are no professional lawyers in China. Each man presents his own case before the magistrate according to certain prescribed rules, and the award is theoretically given in accordance with the principles laid down in the statutes (律), or movements (行), of the Imperial "pencil" (筆), and laws (例), or "human" (人), "regulations" (列). It is needless to say that other and baser principles often influence the decisions of the Mandarins, and that in China as elsewhere

Qui nil habet quo torquat leges, miser
In pelle pauper plectitur,

and hence the origin of the saying "He who enters a law court enters a tiger's den." But the love of publicity which marks the Chinese character is as observable in their Courts of Law as in their daily life, as the symbol for "legal cases" (獄), composed as it is of "public" (公), "words" (言), testifies; while the estimate of those who "litigate" is sufficiently indicated in the compound composed of "words" (言), between two dogs (獄).

The professed desire to do justice in criminal causes is exemplified by the character for "punishment" (刑), which is made up of the parts, an "even" (平) "sword" (刀), and which necessarily recalls the idea of the blinded figure of justice with the upright sword which is the emblem of our own tribunals.

The love of money is a leading characteristic of the Chinese, who have few channels for the exercise of the ambitions of life. The main road to distinction is through the examination hall, and as, after all, only a small proportion of the people can ever hope to carve careers for themselves by that means, the accumulation of wealth is the single path to eminence which is open to the bulk of the population. The acquisition of money secures to a Chinaman all that he holds dear. Official rank, consideration, and the comforts and elegancies of life are all within the reach of a man possessed of riches. It is interesting therefore, to see how the Chinese express on paper the idea of "wealth" and "riches" (富) *Fu*, and we find that they combine "a man" or "mouth" (口), and "fields" (田), under "a roof" (宀), to depict the idea. Happiness (福) *Fuh*, is expressed by the use of a part of the compound "a man" (口), and "fields" (田), with the "god of the soil" (土), added, in acknowledgment of the belief that happiness is to be enjoyed only when the god of the soil sheds the light of his countenance on the possessor of property. In connection with money it is curious to observe from the symbol for silver, that that metal has ever, as now, been the highest currency. The inventors of the character representing

it (鑑), had plainly no idea of any currency beyond this "metallie" (金), "limit" (艮). The same sense is connected with many compounds in which this last symbol occurs. "A boundary" (限), is made up of a mound of earth (土), and a "limit" or "extremity," "a root" (根), "is the extremity" of a tree (木).

But though silver is the highest currency, the Chinese have no silver coinage. Their solitary coin is the cash which varies in size and value in different parts of the Empire, and is consistent only in the universal debasement of the material of which it is supposed to consist. By a strange fiction it is described as being of copper, but a more accurate because vague description of it is given in the character employed to represent it (鑑), which signifies "a small" piece (少), of "metal" (金). This character for "small" or "little" carries its significance into a number of compounds. "Shallow water" (淺) is expressed by "little (少), water" (水); "mean," "ignoble," "worthless" (贱); by "little (少) value" (貞), to "walk mincingly" (跔), by "little" (少), "feet" (足) tsuh, and so on.

But it is time that I brought this paper to a close. The subject is one which is limited only by the number of ideographic characters in the writing, and if by the examples I have adduced I have succeeded in showing that many of these have a distinct anthropological interest, my object in addressing you this evening will have been attained.

DISCUSSION.

In reply to observations made by several Fellows Professor DODGSON said:—The evidence in favour of the theory that portions of the Yih King are formulated on the model of Babylonian Syllabaries is stronger than ever. In conjunction with Professor T. de Laconflin, I translated, some few years ago, eight or ten chapters of this oldest book of the Chinese, and the result fully confirmed the belief which we had formed. Pressure of other work has prevented our continuing the translation, but I hope the time may come when we shall be able to go on with it. As to the character composed of "hand" and "ear" meaning "to take" or "to seize," to which reference has been made, and which I mentioned in my Paper, it suggests at once an indication of the common and very natural practice of taking a prisoner by the ear. This mode of seizing a culprit is still common in Northern Europe and in Asia, and may very probably have been in use in China before the quene (1644) offered a still more convenient manner of apprehending a criminal. Chinese etymologists, however, explain the character as having reference to taking off the left ear, as is commonly done in the case of rebels vanquished in battle. In the *Shiking*, or "Books of Odes," which is said to have been edited by

Confucius, the practice is spoken of in an ode in which, following Dr. Legge's translation, there occurs this passage—

" His martial-looking tiger leaders
Will here present the left ears [of their foes]."

Coming down to modern times I may mention that after the suppression of a rebellion in the province of Canton some forty years ago, a large chest filled with left ears was forwarded to Governor Yeh, as evidence of the victory gained by the Imperial troops.

MAY 10TH, 1892.

EDWARD B. TYLOR, Esq., D.C.L., F.R.S., *President, in the Chair.*

The Minutes of the last meeting were read and signed.

The following presents were announced, and thanks voted to the respective donors :—

FOR THE LIBRARY.

- From the AUTHOR.—Studies in South American Native Languages. By Daniel G. Brinton, M.D. Svo. Philadelphia, 1892. pp. 67, 20.
- Anthropology as a Science and as a branch of University Education. By Daniel G. Brinton, M.D. Svo. Philadelphia, 1892. pp. 15.
- Language as a Test of Mental Capacity. By Horatio Hale, M.A. 4to. 1891. pp. 36.
- Notes on Rude Implements from the North Downs. By F. C. J. Spurrell. Svo. 1891. pp. 6.
- Le Varietà Umane della Melanesia. By G. Sergi. Svo. Roma, n.d. pp. 90. Illustrated.
- From the PUBLISHERS.—Russian Characteristics. By E. B. Lanin. Svo. (Chapman and Hall.) London, 1892. pp. x, 604.
- Legends and Popular Tales of the Basque People. By Mariana Monteiro. Svo. (T. Fisher Unwin.) London, 1890. pp. viii, 274. Plates.
- From the UNITED STATES BUREAU OF ETHNOLOGY.—Omaha and Ponka Letters. By James Owen Dorsey. Svo. Washington, 1891. pp. 127.
- Catalogue of Prehistoric Works, East of the Rocky Mountains. By Cyrus Thomas. Svo. Washington, 1891. pp. 246. Plates.

- From the EDITOR.—*Bullettino di Paleontologia Italiana.* Tom. viii.
 N. 1-4.
 — *Nature.* Nos. 1173, 1174.
 — *Revue Scientifique.* Tome xlix. Nos. 17, 18.
 — *Science.* Nos. 474, 475.
 — *Nouvelle Iconographie de la Saltpêtrière.* 1892. No. 2.
 From the ROYAL UNITED SERVICE INSTITUTION.—*Journal.* No. 171.
 From the UNITED STATES NATIONAL MUSEUM.—*Bulletin.* Nos. 41,
 42.
 From the ROYAL GEOGRAPHICAL SOCIETY.—*Proceedings.* Vol. xiv.
 No. 5.
 From the ROYAL SCOTTISH GEOGRAPHICAL SOCIETY.—*The Scottish
 Geographical Magazine.* Vol. viii. No. 5.
 From the SOCIEDADE DE GEOGRAFIA DE LISBOA.—*Boletim.* 10e Serie.
 Nos. 4 e 5.
 From the SOCIÉTÉ D'ARCHÉOLOGIE DE BRUXELLES.—*Annales.*
 Tome vi, Liv. I.
 From the SOCIETY OF ARTS.—*Journal.* Nos. 2057, 2058.
 From the SOCIETY OF BIBLICAL ARCHAEOLOGY.—*Proceedings.*
 Vol. xiv. No. 6.

Dr. E. B. TYLOR exhibited a series of Aino dresses, weapons,
 &c., from Mr. B. H. Chamberlain's collection.

Mrs. ISABELLA BISHOP read a paper on "The Ainos of Japan."

Mr. ERNEST HART, Dr. E. B. TYLOR, Prof. A. C. HADDON, and
 Dr. J. G. GARSON took part in the discussion.

JUNE 21ST, 1892.

EDWARD B. TYLOR, Esq., D.C.L., F.R.S., *President, in the Chair.*

The Minutes of the last meeting were read and signed.

The election of the following new members was announced:—

J. THEODORE BENT, Esq., of 13, Great Cumberland Place,
 Hyde Park, W.

JAMES DALLAS, Esq., F.L.S., of Cantralees, Lympstone,
 Devon.

MISS J. A. FOWLER, of West View, Grove Park.

L. N. FOWLER, Esq., of West View, Grove Park.

UPFIELD GREEN, Esq., of

J. MASGLES, Esq.,

FREDERICK SESSIONS, Esq., of Russell House, Gloucester.

WILLIAM RADFORD, Esq., of 31, Hogarth Road, Earl's Court.
Miss ROSE STEPHENSON, of The Hermitage, Duppas Hill,
Croydon.

JOSEPH JOHN TYLOR, Esq., of Fir Toll, Mayfield, Sussex.

The following presents were announced, and thanks voted to
the respective donors:—

FOR THE LIBRARY.

- From the AUTHOR.—Notes on a box used in smuggling on the Border fifty years ago. By T. V. Holmes. 8vo. pp. 5.
—The Midéwiwin or "Grand Medicine Society" of the Ojibwa. By W. J. Hoffman. Fol. Washington, 1891. pp. 156.
—Monuments primitifs des îles Baléares. By Emile Cartailhac. 4to. Toulouse, 1892. pp. xi, 80. Plates.
—Entwicklungserscheinungen in der Ornamentik der Naturvölker. By Dr. Hjalmar Stolpe. 4to. Wien, 1892. pp. 44.

- From the PUBLISHERS.—Property; its Origin and Development. By Ch. Letourneau. 8vo. (Walter Scott.) London, 1892. pp. xii, 401.

- Mar-moat or the Mountain of the Assembly. By the Rev. O. D. Miller, D.D. 8vo. (S. M. Whipple.) North Adams, 1892. pp. xxi, 445.
—What and where is God? By H. B. Philbrook. 8vo. (A. G. Sullivan.) New York, 1887. pp. xxiv, 480.
—Physical Education in the Public Schools. By R. Anna Morris. 8vo. (American Book Co.) New York: Cincinnati: Chicago, n.d. pp. 192.
—Games Ancient and Oriental, and how to play them. By Edward Falkener. 8vo. (Longmans and Co.) London, 1892. pp. iv, 366. Illustrated.

- From the SYNDICS OF THE CAMBRIDGE UNIVERSITY PRESS.—The Origin of Metallic Currency and Weight Standards. By William Ridgeway, M.A. 8vo. Cambridge, 1892. pp. xii, 417. Woodcuts.

- From the DELEGATES OF THE CLARENDON PRESS.—The Land-Systems of British India. By B. H. Baden-Powell, C.I.E. Three Volumes. 8vo. Oxford, 1892. pp. xx, 699; 771; 632. Maps.

- From the SECRETARY OF STATE FOR THE COLONIES.—Despatches from his Honour the Administrator of New Guinea, dated respectively 15th Aug., 1891; 7th Jan., 1892; 6th Feb., 1892; 9th Feb., 1892; and 13th Feb., 1892. Fol. pp. 2, 2, 6, 6, 4.

- From the SECRETARY OF STATE IN COUNCIL IN INDIA.—Manual of the Siyin Dialect. By Captain F. M. Rundall. 8vo. Rangoon, 1891. pp. 47.

- Handbook of the Haka or Baungshe Dialect. By D. J. C. Macnabb. 8vo. Rangoon, 1891. pp. 6, 52.
—Essay on the Language of the Southern Chins. By Bernard Houghton. 8vo. Rangoon, 1892. pp. 2, 131, xx.

- From the ROYAL SCOTTISH GEOGRAPHICAL SOCIETY.—The Scottish Geographical Magazine. Vol. viii. No. 6.
- From the UNITED STATES BUREAU OF ETHNOLOGY.—Bibliography of the Algonquian Languages. By James Constantine Pilling. 8vo. Washington, 1891. pp. x, 614. Facsimiles of Title-pages.
- From the INDIA OFFICE.—Report on the Administration of the Andaman and Nicobar Islands and Penal Settlements of Port Blair and the Nicobars, for 1890-91. Fol. Calcutta, 1891. pp. 149.
- From the ÉCOLE D'ANTHROPOLOGIE DE PARIS.—Revue mensuelle. 1892. Nos. 5, 6.
- From the ACADEMIE DES SCIENCES DE CRACOVIE.—Bulletin Internationale, 1892. Nos. 4, 5.
- From the EAST INDIA ASSOCIATION.—Journal. Vol. xxiv. Nos. 3, 4.
- From the ESSEX FIELD CLUB.—The Essex Naturalist. Vol. v. No. 12; Vol. vi, Nos. 1-5.
- From the EDITOR.—The American Antiquarian. Vol. xiv. No. 3. — L'Anomalo. 1892. Nos. 4, 5.
- L'Anthropologie. Tome iii. No. 2.
- Internationales Archiv für Ethnographie. Band v. Heft 2.
- Nature. Nos. 1175-1181.
- Revue Scientifique. Tome xlix. Nos. 19-25.
- Science. Nos. 477-487.
- The American Journal of Psychology. Vol. iv. No. 3.
- From the ROYAL ARCHAEOLOGICAL INSTITUTE.—The Archaeological Journal. No. 193.
- From the ROYAL INSTITUTION OF CORNWALL.—Journal. Vol. xi. Part 1.
- From the ROYAL UNITED SERVICE INSTITUTION.—Journal. No. 172.
- From the SMITHSONIAN INSTITUTION.—Report. 1890.
- From the AUSTRALIAN MUSEUM.—Records. Vol. ii. No. 1.
- From the UNITED STATES NATIONAL MUSEUM.—Report, 1889.
- From the ANTHROPOLOGICAL SOCIETY OF WASHINGTON.—The American Anthropologist. Vol. v. No. 2.
- From the BERLINER GESELLSCHAFT FÜR ANTHROPOLOGIE, ETHNOLOGIE UND URGESCHICHTE.—Zeitschrift für Ethnologie. 1891. Heft 6; 1892, Heft 1: Nachrichten über deutsche Alterthumsfunde. 1891, Heft 6; 1892, Heft 1.
- From the DEUTSCHE GESELLSCHAFT FÜR ANTHROPOLOGIE ETHNOLOGIE UND URGESCHICHTE.—Archiv für Anthropologie. Band xxi. Heft 1 und 2.
- From the K. K. GEOGRAPHISCHE GESELLSCHAFT IN WIEN.—Mittheilungen. 1891.
- From the NIEDERLAUTZIKER GESELLSCHAFT FÜR ANTHROPOLOGIE UND URGESCHICHTE.—Mittheilungen. Band ii. Heft 4.
- From the OBERHESSEISCHE GESELLSCHAFT FÜR NATUR- UND HEILKUNDE.—Bericht xxviii.
- From the ROYAL GEOGRAPHICAL SOCIETY.—Proceedings. Vol. xiv. No. 6.

- From the ROYAL SOCIETY.—Proceedings. No. 308.
From the ROYAL SOCIETY OF VICTORIA.—Transactions. Vol. ii.
Part 2.
From the SOCIÉTÉ IMPÉRIALE DES NATURALISTES DE MOSCOU.—Bul-
letin. 1891. No. 4.
From the SOCIETY OF ANTIQUARIES OF SCOTLAND.—Proceedings.
3rd Series. Vol. i.
From the SOCIETY OF ARTS.—Journal. Nos. 2060—2065.
From the SOCIETY OF BIBLICAL ARCHEOLOGY.—Proceedings. Vol.
xiv. No. 7.
From the ROYAL SOCIETY OF LITERATURE.—Transactions. Vol. xv.
No. 1.
From the UNIVERSITY OF TOKIO.—Journal of the College of Science,
Imperial University, Japan. Vol. v. Part 1.
-

Dr. R. WALLASCHEK read a paper entitled "An Ethnologi-
cal Inquiry into the Basis of our Musical System."

Mr. RANDALL H. PYE, Dr. E. B. TYLOR, Prof. RUPERT JONES,
and Mr. H. BALFOUR took part in the discussion.

Professor BASIL HALL CHAMBERLAIN read a paper on "Some
Minor Japanese Religious Practices."

Dr. E. B. TYLOR, Mr. A. L. LEWIS, Mr. A. DIOSY, Mr. M. BEAU-
FORT, and others took part in the discussion.

SPECIAL MEETING—OCTOBER 18TH, 1892.

EDWARD B. TYLOR, Esq., D.C.L., F.R.S., *President, in the Chair.*

Major R. C. TEMPLE, I.S.C., read a paper on "Developments
in Buddhistic Architecture and Symbolism as illustrated by the
Author's recent exploration of Caves in Burma."

In the discussion that ensued, Dr. TYLOR, Prof. RHYS DAVIDS,
Mr. TAW SEIN KO, Mr. H. BALFOUR, Mr. A. L. LEWIS, Dr.
EDKINS, Dr. GARSON, and Mr. FRAZER took part, and the Author
replied.

NOVEMBER 8TH, 1892.

EDWARD B. TYLOR, Esq., D.C.L., F.R.S., *President, in the Chair.*

The Minutes of the last meeting were read and signed.

The following elections were announced:—

Professor GERLAND, of the University of Strassburg, as an Honorary Fellow.

C. W. CAMPBELL, Esq., of 5, Philbeach Gardens.

W. CROOKE, Esq., of Mirzapur, N. W. Provinces, India.

JOHN THOMSON, Esq., of 70A, Grosvenor Street, London.

Professor JOHN STRUTHERS, of 24, Buckingham Terrace, Edinburgh.

LOUIS ROBINSON, Esq., M.D., of 162, High Street, Lewisham.

W. L. ALLARDYCE, Esq., of Suva, Fiji.

A. E. CRAWLEY, Esq., of St. John's School, Leatherhead, as Ordinary Fellows.

The following presents were announced, and thanks voted to the respective donors:—

FOR THE LIBRARY.

- From the AUTHOR.—*A Study of Prehistoric Anthropology.* By Thomas Wilson 8vo. pp. 76.
- *Studies in Psychology.* By S. G. Burney, D.D., LL.D. 8vo. Nashville, Tenn., 1890. pp. xvi, 535.
- *Antropologia e Pedagogia. Parte Prima.* By Dott. Paolo Riccardi. 4to. Modena, 1892. pp. 172.
- *Ideale Welten in wort und bild.* 3 vols. 4to. Berlin, 1892. pp. 289, 270, 232.
- *The Speech of Monkeys.* By R. L. Garner. 8vo. London, 1892. pp. xvi, 260.
- *Ten Years' Travel and Sport in Foreign Lands.* By H. W. Seton-Karr. 8vo. London, 1890. pp. xii, 445.
- *Family Names from the Irish, Anglo-Saxon, Anglo-Norman, and Scotch considered in relation to their Etymology.* By Thomas G. Gentry. 8vo. Philadelphia, 1892. pp. 225.
- *Further Notes on Fuegian Languages.* By D. G. Brinton, M.D., LL.D. 8vo. pp. 6.
- *The Written Language of the Ancient Mexicans.* By D. G. Brinton, M.D., LL.D. 4to. pp. 6.
- *Indonesische Masken.* By C. M. Pleyte, Wzn. 4to. pp. 10.
- *The Pagan-Christian Overlap in the North.* By Henry Colley March, M.D. 8vo. pp. 41.

- From the AUTHOR.—*The Language of the Mississagas of Skûgog.*
 By A. F. Chamberlain. 8vo. Philadelphia, 1892. pp. 84.
- *La Détermination de la taille d'après les grands os des membres.* 8vo. Paris, 1892. pp. 56. By Dr. L. Manouvrier.
- *Die geometrischen Prinzipien der elementaren Schädelmessungen und die heutigen kraniometrischen Systeme.* By Prof. Dr. Aurel v. Török. 8vo. 1892. pp. 88.
- *Crania Ethnica Americana.* By Rudolf Virchow. Fol. Berlin, 1892. pp. 34. Plates.
- *Neuere Beiträge zur Frage der Horizontalebene des Schädels in Bezug auf die kraniometrische Analyse der Schädelform.* By Prof. Dr. A. v. Török. 4to. Vienna, 1892. pp. 16.
- *Über einige gesetzmäßige Beziehungen zwischen Schädelgrund, Gebirn- und Gesichtsschädel.* By Prof. Dr. A. v. Török. 4to. pp. 5.
- *Über die heutige Schädellehre.* 8vo. 1892. pp. 17.
- *Über eine neue Methode den Sattelwinkel zu messen.* By Prof. Dr. A. v. Török. 8vo. 1890. pp. 81.
- *Über ein Universal-Kraniophor.* By Prof. Dr. A. v. Török. 8vo. 1889. pp. 69.
- *Das Wesen und die Aufgabe der systematischen Kraniologie.* By Prof. Dr. A. v. Török. 8vo. 1891. pp. 20.
- *British Guiana; the North-Western District.* By Everard F. im Thurn, M.A., C.M.G. 8vo. pp. 24.
- *Les types anthropologiques des Grands-Russes des gouvernements du centre de la Russie.* By N. Zograf. 8vo. pp. 12.
- Note sur les méthodes de l'anthropométrie sur le vivant pratiquées en Russie et sur la nécessité d'établir une entente internationale pour arrêter les méthodes communes des recherches anthropométriques. By N. Zograf. 8vo. pp. 12.
- *Anthropometric Statistics.* By N. Zograf. 4to, Moscow, 1892. pp. 178. Plates.
- *Finger-prints.* By Francis Galton, F.R.S. 8vo. London, 1892. pp. 216. Illustrated.
- *Die Formen des Ober- und Unterkiefers bei den Europäern.* By Dr. J. Kollmann. 8vo. 1892. pp. 32.
- *Did the Phoenicians Discover America?* By T. Crawford Johnston. 8vo. pp. 30.
- *L'Anthropologie du Bengale.* By Paul Topinard. 8vo. pp. 35.
- *On the Importance and Nature of the Oceanic Languages.* By Sidney H. Ray. 8vo. pp. 10.
- From the PUBLISHERS.—*Is Man too Prolific?* By H. S. Pomeroy, A.M., M.D. 8vo. (Funk and Wagnalls.) London, New York, Toronto, 1891. pp. 64.
- *Elementary Psychology.* By James H. Baker, A.M. 8vo. (Effingham, Maynard, and Co.) New York, 1891. pp. 232.
- *Harvard Studies in Classical Philology.* Vol. iii. 8vo. (Ginn and Co.) Boston, 1892.

- From the PUBLISHERS.—*The Presumption of Sex.* By Oscar Fay Adams. 8vo. (Lee and Shepard.) Boston, 1892. pp. 149.
- *Studies in Nature and Language Lessons.* By T. Berry Smith, A.M. 4to. (Heath and Co.) Boston, 1890. pp. 121.
- *Evolution in Science, Philosophy, and Art.* 8vo. (Appleton and Co.) New York, 1891. pp. x, 476.
- *The Universality of Man's Appearance and Primitive Man.* By Edward L. Anderson. 8vo. (R. Clarke and Co.) Cincinnati, Edinburgh, 1891. pp. 28.
- *Christian Anthropology.* By the Rev. John Thein, with an introduction by Prof. Charles G. Herbermann, Ph.D., LL.D. 8vo. (Benziger Bros.) New York, Cincinnati, Chicago, 1892. pp. 576.
- *The Hibbert Lectures, 1891.* By Count Goblet d'Alviella. 8vo. (Williams and Norgate.) London, Edinburgh, 1892. pp. xvi, 296.
- *The History of Historical Writing in America.* By J. Franklin Jameson, Ph.D. 8vo. (Houghton, Mifflin, and Co.) Boston and New York, 1891. pp. 6, 160.
- *Sea Phantoms.* By Fletcher L. Bassett. 8vo. (Morrill, Higgins, and Co.) Chicago, 1892. pp. 505.
- *Sex and Life.* By Eli F. Brown, M.S., M.D. 8vo. (F. J. Schulte and Co.) Chicago, n.d. pp. 142.
- *Our Life among the Iroquois Indians.* By Mrs. Harriet S. Caswell. 8vo. (Congregational Sunday School and Publishing Society.) Boston and Chicago, n.d. pp. xiv, 321.
- *Studies in Mohammedanism.* By John J. Pool. 8vo. (Archibald Constable and Co.) Westminster, 1892. pp. xvi, 419.
- *Buddhism, Primitive and Present in Magadha and in Ceylon.* By Reginald Stephen Copleston, D.D., Bishop of Colombo. 8vo. (Longmans and Co.) London, 1892. pp. xvi, 501.
- *Makers of Modern Thought.* By David Nasmyth, Esq., Q.C. 2 vols. 8vo. (G. Philip and Son.) London, 1892. pp. xvi, 289; x, 271. (12s. net.)
- *Up the Niger.* By Capt. A. F. Mockler-Ferryman. 8vo. (G. Philip and Son.) London, 1892. pp. xx, 326. Illustrated. (16s.)
- *British New Guinea.* By J. P. Thomson. 8vo. (G. Philip and Son.) London, 1892. pp. xviii, 336. Illustrated. (21s.)

- From the DELEGATES OF THE CLarendon Press.—*Essays upon Heredity and Kindred Biological Problems.* By Dr. August Weismann. 2 vols. 8vo. Oxford, 1891, 1892. pp. xv, 471; viii, 226.
- *The Sacred Books of the East.* Vol. xxx. Edited by F. Max Müller. 8vo. Oxford, 1892.
- *History of the New World called America.* Vol. i. By Edward John Payne. 8vo. Oxford, 1892. pp. xxviii, 546.

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Mr. E. F. IM THURN read a paper on the " Anthropological Uses of the Camera."

A paper by Mr. H. LING ROTH on " Couvade," and a paper by Mr. S. E. PEAL on " The Morong," were read.

ANTHROPOLOGICAL USES OF THE CAMERA.¹

By E. F. IM THURN, C.M.G.

[WITH PLATES X; XI.]

AMONG the innumerable uses now made of the photographic camera, that which might be made of it by the anthropologist, and especially by the travelling anthropologist, seems to be insufficiently appreciated and utilised. Allusion is not here made so much to the use of the camera, in connection with anthropometry, for the study of anthropology in its strictly physiological aspects—to its use in taking physiological photographs, on a fixed scale, of the human figure, in certain definite positions, and of simultaneously accurately measuring the same figure; for that, though a very useful function of the camera, is, though somewhat more difficult of practice among primitive folk than those who have not tried it imagine, of quite sufficiently recognised importance. My special concern to-night, on the other hand, is as to the use of the camera for the accurate record, not of the mere bodies of primitive folk—which might indeed be more accurately measured and photographed for such purposes dead than alive, could they be conveniently obtained when in that state—but of these folk regarded as living beings. This latter is indeed a far more difficult proceeding, one much more seldom practised by anthropologists, and one the utility of which for anthropology, regarded, as we all wish to regard it, as an exact science, some anthropologists will, I fancy, be at first sight inclined to question.

Primitive phases of life are fast fading from the world in this age of restless travel and exploration, and it should be recognised as almost the duty of educated travellers in the less known parts of the world to put on permanent record, before it is too late, such of these phases as they may observe; but it is certainly not a sufficiently recognised fact that such records, usually made in writing, might be infinitely helped out by the camera.

¹ [The author has kindly presented copies of the photographs referred to, to the Library.]

As illustrating the small use of the camera for this special purpose, attention need only be called to the almost universal badness of illustrations of living primitive folk in books of anthropology and travel, when these illustrations are not merely what may be called physiological pictures. It is true that considerable change, though certainly not any advance at all proportionate with the possibilities, has been made since the old days in which this power of photography, marvellous even to the thoughtful man of to-day, of reflecting on the white screen, here at home in such a room as this, in minutest detail, the actual scenes which were seen by the traveller months or years before, and it may be some thousands of miles away, would have seemed, could it have been foreseen, the blackest magic. Of old, the book illustrator, if, as was usual, he was not himself the traveller, drew as pictures of primitive folk, merely the men and women that surrounded him, drew figures of men and women of his own stage of civilisation, and merely added to these such salient features as he was able, from the traveller's tales, to fancy that his supposed primitive subjects had. So in 1599 the imaginative artist of Nuremberg who drew the pictures for the rare Latin abbreviation of Sir Walter Raleigh's "Discoverie of Guiana" gave to the world his impressions of the "Amazons," the "Headless Men," and the "Men who dwelt on trees" which are typical of the pictures of "savages" which adorn the travellers' books up to nearly the present century.¹

Analogous pictures of a somewhat later time, as late indeed as the end of the last century, may be instanced in the beautifully executed illustrations by Bartolozzi in Stedman's "Dutch Guiana," in which, in place of natives, are shown, with the necessary change of dress, simply Europeans of more than average beauty of form. There were doubtless exceptions to the misrepresentation of primitive folk, and the greatest of these exceptions known to me is the beautiful series of drawings by Catlin of North American Redmen. But Catlin enjoyed the unusual advantage not only of considerable technical skill as an artist, but of living among the folk whom he drew and about whom he wrote. But even his drawings, valuable as they are, and artistically superior as they are, are far from having the value of the accuracy of photographs.

The modern anthropological illustrator does indeed generally draw from photographs; but almost always from photographs taken

¹ "Brevis et admiranda descriptio regni Guiana . . . quod super admodum . . . per generosum D. D. Gualtherum Raleigh equitem Angium, detectum est. Impensis Levini Hulsi. 4to. Norberge, 1599."

under non-natural conditions. An example would not be hard to find, and might indeed be found in one of the most valuable and accurate of recent anthropological books, in which is given a picture of the Caribs of my own country of Guiana, which, I am assured by the very distinguished author, was the best attainable. This picture gives no hint of what Caribs are like in their natural state; but it is evidently taken from a photograph, the history of which I have been unable to trace. The explanation is, however, easy to me. During my many years acquaintance with these Caribs, both in their native wilds and during their brief visits to the town, I have often been struck by the marvellous difference in their appearance when seen under these two differing conditions. It is true that in his natural surroundings the Carib is but very lightly clad, whereas, on the rare occasions when he enters the town he sometimes, but by no means always, puts on a fragmentary and incongruous piece or two of the cast-off clothing of white men, intending, by no means successfully, to adorn his person; but such separable accidents of rags by no means explain the full change in his appearance. I have seen the same men, in their distant homes on the mountainous savannahs between Guiana and the Brazils, though clothed with but a single strip of cloth, two or three inches wide and perhaps a yard in length, and either unadorned or adorned with but a scrap of red or white paint, look like what the novelists describe as well-groomed gentlemen. Yet the same individuals in Georgetown, without any added clothing or adornment, look the meanest and wretchedest folk imaginable. The sense of shyness and mean eringing fear which in the town doubtless drives out from them their innate sense of freedom and happy audacity, seems to find outward expression and completely to alter their bodily form. And it was quite evidently under some such depressing circumstances as these that the Redmen—who, by the way, were probably Aekawois and not "True Caribs"—who are shown in the illustration which is in my mind, were photographed.

Just as the purely physiological photographs of the anthropometrists are merely pictures of lifeless bodies, so the ordinary photographs of uncharacteristically miserable natives, such as that which I have just described, seem comparable to the photographs which one occasionally sees of badly stuffed and distorted birds and animals.

But, it will be said, good and characteristic photographs of primitive folk in their natural condition are seldom to be obtained. Even in these days, when so many travellers carry cameras, and when a considerable number of these have skill in using their cameras, the photographs of natives thus obtained

are neither as many nor as good as might have been expected. Not long ago in an able review of some published book of illustrations of native life—I think in the Pacific—the reviewer expressed it as his opinion that the attempt was a failure, as must be all attempts photographically to portray uncivilised folk. My task to-night will be to show that the record, by the camera, of phases of primitive life, though certainly not without difficulty, yet is not impossible; and that, this being possible, it is for anthropological purposes well worth doing. I am only sorry that my own attempts in this direction, partly doubtless owing to deficiency of skill, partly to the fact that my life is a busy one, and that other demands on my time effectually prevent me from giving as much care as I should like to anthropological photography, are not as excellent as I could wish. They are shown not as in any way perfectly realising, but as tending in the direction which should be taken.

Risking a charge of egotism, I must give a few words of explanation of the circumstances under which the illustrations I shall put before you were taken.

Fifteen years ago I went out to Guiana as curator of the public museum, and in that capacity travelled much in the interior of that colony, only the seaboard of which was, and very little more now is, inhabited. Ten years ago I entered the service of the Government, and, as magistrate, took charge of a large district inhabited almost solely by Redmen. And I remained under those circumstances until, about two years ago, I was transferred to a neighbouring and still larger district of which it may be said that up to the time of my going there the white men who had visited it might be counted on the fingers of one hand. Throughout this time I have lived really among these pleasant red-skinned folk, now and again, for periods of greater or less duration, living not only among, but as they do; and throughout that period I have had none but Redmen as my servant friends. They have got used to me, and I have got used to them, and doubtless in this respect I have enjoyed greater advantages in the matter of gaining their confidence than the ordinary traveller, who merely passes through a country, could hope to enjoy. Some ten years ago, in a book on the "Indians of Guiana" I told all that I then knew about them. Though of course further experience has now taught me a good deal more about them, I must not here linger on anything that does not touch my special subject of to-night—my experiences as a photographer among them.

That to gain the confidence of uncivilised folk whom you wish to photograph, is one of quite the most essential matters

you will easily understand. The first time I tried to photograph a red man was among the mangrove trees at the mouth of the Barima river. My red-skinned subject was carefully posed high up on a mangrove root. He sat quite still while I focussed and drew the shutter. Then, as I took off the cap, with a moan he fell backward off his perch on to the soft sand below him. Nor could he by any means be persuaded to prepare himself once more to face the unknown terrors of the camera. A very common thing to happen, and to foil the efforts of the photographer at the very moment when he has but to withdraw and to replace the cap, is for the timid subject suddenly to put up his hand to conceal his face, a proceeding most annoying to the photographer, but interesting to the anthropologist, as illustrating the very widespread dread of primitive folk of having their features put on paper, and being thus submitted spiritually to the power of anyone possessing the picture.

In passing, a curious instance may be mentioned of the discovery, thanks to the camera, of that rather rare thing—a personal idiosyncrasy among Redmen. Some time last year in photographing a number of Carib lads I noticed that one of them, at the moment of the taking of the picture, suddenly put up his hands and put them, not over his face, but one on each shoulder. The attitude struck me at once as an unusual one, but yet it seemed to me in some way familiar. Some time after, in looking through my old stock of negatives I found one which showed a much younger Carib lad in the same unusual attitude, and it was only after some inquiry that I realised that this last-named negative was one which I had taken some years before of the same boy.

After what has already been said on the subject it is only necessary here just to refer to the sufficiently obvious fact that one of the great uses of the camera to the anthropologist is for the making of what have here been called physiological photographs. An accumulation of a large number of these, taken in accordance with a fixed scale, would undoubtedly have a very considerable value if, it must be added, these were accompanied by a series of exact measurements of the persons photographed; but, it must also be added, such an undertaking presents very considerable difficulties, dependent on the difficulty of inducing uncivilised folk, even after long familiarity with them, to stand in exactly the artificial positions requisite for the purpose, and on the number of photographs, putting it at three each of a large number of individuals, which are required to afford sufficient data for the deduction from them of any inferences. Only a person provided with almost unlimited time, patience, influence over his subjects, and means of trans-

port of the necessary bulky and weighty material in uncivilised countries, should attempt such a task.

On the other hand if the task attempted is to help out, with the great and wonderful powers of the camera, the traveller's description of the folk among whom he has passed, to picture them to home-staying anthropologists better and far more vividly than any words or even any drawing can do, the task, if yet not light, is comparatively easy. This I hope to illustrate by a series of pictures taken during the last six years in British Guiana.

With reference to my earlier remarks on the difficulty of discerning in the ordinary illustrations the real bodily appearance of uncivilised folk, photographs of the True Caribs of Guiana will be shown on the screen. And in so doing it may, without entering into elaborate detail, be once more pointed out that the red-skinned inhabitants of Guiana are distinguishable into three groups or branches¹ (see "Among Indians of Guiana," p. 159, and "Proceedings of Royal Geographical Society," October, 1892). Though the actual pre-European history of these three is, unfortunately, still greatly a matter of conjecture, it is convenient to use such conjectures as seem most reasonable on this subject as a means of distinguishing the branches—that is to say, it is well to bear in mind that probably of the tribes at present in Guiana the Warraus, who inhabit the swamps about the mouth of the Orinoco, were the earliest occupiers, but that there is at present no evidence at all to show whence these people reached their present homes; that another of the branches, represented only by the Arawacks, who inhabit the whole sea-coast of that country with the exception of the more swampy lands of the Warraus, probably reached their present homes from the West Indian Islands long after the Warraus were already established in those parts; and that the third branch, usually called the Carib branch, and represented by the Ackawois, Macusis, Arecunas, and by the "True Cariba," came also from the Islands, but at various times, and made their way, in somewhat various directions, into the back lands of the country. The first set of pictures I am about to show you all are of this last or "True Carib" branch.

The first is of a middle-aged man who lives in the first falls of the Barima River. A single glance at it and a comparison of it with the ordinary, even the best book illustrations of Caribs, will at once serve to make plain the advantage of the photographic method used among the people in their own

¹ Only a limited number of the photographs shown in illustrating the reading of this paper can be reproduced for the Journal.

homes over any other method of showing what these primitive folk are really like. Before shooting the falls in their canoes the Redmen always carefully examine the state of the river to see which rocks are exposed, which lurk as hidden dangers beneath the surface in that particular state of the water; and it was while he was engaged in this cautious survey that this photograph of this Carib was taken. The next is of the same man taken under somewhat different circumstances. The hospitality of these persons is almost unbounded, and the etiquette of its observance is rigidly fixed. The master of the house, when expecting guests, grooms himself carefully and puts on his best dress and ornaments, these often, as in this case, consisting only of a narrow waistcloth by way of dress and of a necklace and armlets of white beads by way of ornament. Thus honouring the occasion to the best of his ability, he sits, somewhat stolidly, outside his house awaiting his guests, with whom when they arrive he will without rising or in any other way testifying any interest, exchange one or two entirely conventional and monosyllabic sentences, dropping them out one by one at long intervals.

It is generally supposed that these red-skinned folk are undemonstrative in their bearing towards one another. But this really is only in the presence of strangers. When alone, or before others with whom they are familiar, their bearing toward each other is even caressing. Such a picture as this, of three Caribs standing with their arms round each other's necks, may often be seen.

The next picture, of a young Carib man, perhaps a little above the average in physique, is intended to show that these people, though not tall, are a fine people in the point of physical and muscular development.

Again, in the matter of facial expression, the ordinary conception of these people as dull and expressionless should give place to the truer idea that, when not made shy by the presence of unaccustomed strangers, there is a great deal of life and even in some cases of beauty in their appearance. It is practically impossible for a stranger to see them in this their more pleasing and natural state, except when, as I now do in this picture of three Carib lads, they are taken under the most natural conditions, and distance and time being for the purpose annihilated, they are shown you in the most natural conditions but without their knowledge.

That it may not be said that in my anxiety to impress you with my own too favourable ideas of these red-skinned friends of mine, I have elected only to show you young fellows in their too brief prime, I next show you an old Carib. I must, how-

ever, admit that he is only old for a Redman. His age was probably about forty-five. But these happy childlike people lead but a short if a happy life, and are old at fifty, and rarely survive to sixty.

Even among the young folk disease sometimes, though I am glad to say not often, plays havoc. And I am able to show you a picture of an unfortunate lad of that race suffering from the malady which is most common among them—consumption.

And lest it should be said that I have ungallantly confined my selection to the men, I end this series of Carib pictures by one of a group of three women sitting together after a common, but surely inconvenient fashion, in one hammock.

Some interest attaches to the as yet not very numerous instances of persons whose veins are half filled with Indian, half with foreign blood. I have, personally, not the slightest doubt that the pure Indian left to himself and his own natural conditions is much the happier and morally the better man. But from the first instant that the stronger European influence meets and touches the weaker native American race, it is absolutely unavoidable that a change should begin in the latter; and it has always seemed to me that it is our duty, though I fear one that has seldom enough in the history of the world been acted on, or at least been wisely acted on, to see that this change which we are forced by circumstances to make in this naturally happy and estimable folk, should be as little to their detriment as possible. As a well known and much esteemed man, who was at the time your President, once said to me, it seems to be a fact that, sad as has been the history of the relations of civilised with uncivilised man, there has probably never been an uncivilised folk which would have met the friendly advances of civilised men in any hostile spirit. Guiana is one of the not too numerous places in which from the first the European influence, largely, it must be admitted, because the circumstances of the place did not bring it much in contact with the native element, has been comparatively, unfortunately I can only say comparatively, harmless to the latter. But now, when, owing to the spread of the gold industry into the before unknown interior of the colony, these circumstances are rapidly changing, and the European and native elements are inevitably being daily brought more and more into contact, it would become us to see that the gradual merging of the native into the European element should be accomplished with as little injury to the former as possible. And this desirable end, difficult, it must be admitted, of attainment, could best, and, it seems to me, only be reached, by a

gradual intermarriage of the two elements. It is not without interest, therefore, to note what has been the result of such intermarriage as has already taken place.

The matter should be considered in two aspects, the moral and the physical; and in so doing it must be remembered that the European element introduced into the problem is diverse, for it is brought in by English, Spanish, Portuguese, and—for these too are European in the sense that they have been introduced by Europeans—Negro, Chinese, and East Indian.

Taking these in the order of their strength, the Negro has intermarried with the Redmen more than have any of the others. The resulting half-breeds are known in the colony as "cobungrus" or as "cobs," and are, as far as I know, invariably the result of the intermarriage of a black man with a red woman. Morally the good or evil result of the cross depends on whether the offspring are brought up entirely by the mother and entirely among her folk, or among and as the father's folk. In the former case the child acquires chiefly the qualities, which are generally the good if simple qualities, of an almost entirely nature folk; while in the latter case it acquires rather the qualities of the father, which, in no spirit of reprobation, but of pity, must be described as those most woefully and sadly unfortunate qualities which the European, as a Frankenstein, compounded and supplied to that most artificial creature which, by his original enslavement of the Africans and then by the too rapid and entirely badly planned enfranchisement of these same, he created. On the other hand, if we turn from the moral to the physical aspect of such an intermarriage as we are contemplating, the result may much more undeservedly be pronounced excellent. In a very striking recent book written by a black man on black men, the unexpectedly frank truism is, with quite admirable courage, stated that the greatest drawback of the black man, when he struggles for civilised existence, lies in his physical ugliness. Now this ugliness chiefly, of course, finds expression in his face; but it is yet exhibited in his whole body, which, however, is generally of most amazing and admirable strength. The red man, on the other hand, generally has a face which, if not beautiful according to the European standard, is yet, in delicacy and beauty of line far more admirable than is that of our black man; and his body, wanting the brute strength of the black man, yet far surpasses the latter in its beauty of line and in its marvellous suppleness. Now, if in the blended offspring of a black man and a red woman the moral characters of the two parents, as originally implanted in equal proportions, are liable to be educationally altered in the direction of those of either the

father or the mother, in accordance as he lives either among his father's or his mother's folk, yet the physical qualities originally imparted by the two parents are liable to no such modification. Probably in accordance with some phase of the law of beneficial variation, it happens that it is the better physical qualities of each of the parents respectively which find place in the offspring, to the exclusion of the less worthy. So that the body of the child, with the strength of the black father is combined the beauty of line and consequent suppleness of his maternal red-skinned folk.

It must be confessed that the various favourable results which have here been attributed to the union of the black man and the red woman are too seldom attained, at least in full perfection; but it is of course equally seldom that the requisite most favouring circumstances all co-exist. But that an approximation to these good results is occasionally attained—and is, therefore, worth striving for—I can bear personal witness. For about ten years past my life has been made comparatively smooth for me by the services of one such half-breed, whose picture I now show you. Gabriel is the child of a red-skinned mother—a Warrau—and a black father. It must be admitted that the moral qualities of the father were not quite what they should have been, for he was brought into contact with the mother in consequence of having to take refuge among her folk when in hiding from the police who were in search of him on a charge of murder. History does not say what became of him after (having lived with the Warrau woman but a few months) he deserted her. The child was brought up by the mother, and entered my service when he was probably about seventeen, ten years ago. Physically the picture of him which I show you speaks for itself. It can, of course, not be claimed that his face is beautiful, but it is at least far more refined than that of the ordinary black man, and his expression, of which the photograph gives no idea, has the gentle intelligence of the red man, with a certain proportion of the animal good humour which is the most favourable character to be looked for in the black man's face. That his strength is not only apparent but real will be understood from the fact that I have seen him walk a short distance, when portaging the baggage past a fall, with a rice bag, weighing 120 lbs., on each shoulder. As regards more obscure qualities, you must take it on trust from me that he has in quite remarkable degree the great knowledge, of a certain kind, and the intelligence to apply this knowledge which enable the red man to hunt with success in the difficult and obscure forests of Guiana, where game abounds, but under conditions so difficult that hardly any European, however

skilled or trained a huntsman, can hope for any success ; that his versatility is considerable is, I think, sufficiently proved by the fact that he has readily adapted himself to help me in all the many European hobbies which go to make up my life, and has even acquired sufficient of the delicacy of skill requisite to assist me in the manipulation of the camera in the field. In short, he is as versatile and faithful a servant as anyone ever had ; and such few defects as he has are, I fear, acquired, despite all care, by his contact with an influence so foreign to him as is the European.

After the Negro-Redskin cross, the one next most commonly represented in Guiana, is the Spanish Arawack. The history of these people is as follows :—For some time before and after the war of independence of the neighbouring country of Venezuela, certain Venezuelians, already probably of mixed Spanish and red blood, worried by the constant demands on their services as soldiers in a war in which they took no interest, fled across the Orinoco and settled on the Moruka River, in British territory. Here they married wives of the Arawacks of the district, and, partly doubtless because they were Roman Catholics, kept themselves distinct from the other people of the district, and have ever since maintained this isolation. Physically they are a fine people, and they have always been a fairly industrious people ; but now that the gold industry has invaded the very river on which they had settled, their quiet and industrious habits are, it is to be feared, in danger of transmutation.

As a picture of a Spanish Arawack may be shown one of a young man nicknamed El Gato, or "the cat," on account of the wonderful suppleness and agility of his limbs.

Considerations of time forbid that I should do more than merely show you pictures of the cross resulting from the mixture of Portuguese and Arawack blood, and the still more curious mixture of Scotch and Arawack blood. In the latter case it will be noticed that, as in all the other rare instances I have seen of the mixture of British with Red blood, the resulting cross takes much more exclusively after the European parent than is common when the foreign element is of non-British origin.

Another obvious, but insufficiently used, use of the camera for anthropological purposes would be for the better illustration of collections of objects of ethnological interest. Those who have tried know best the difficulty of showing these in an effective and interesting manner. Comparatively elaborate and correspondingly artistic objects made and used by a people who have made considerable progress without attaining what we

are pleased to call civilisation, are easily shown in an attractive manner; but the simpler objects, illustrating the daily life of people in a much more primitive state of civilisation, are not so easily placed. The articles which constitute the dress and ornaments of a people which makes but little use of ornament and less of dress, are generally of so simple a nature that when stored in rows or, as I am afraid is sometimes the case, in heaps or even in bundles, in museum cases, they too often seem deficient in interest to the very curators of the museum, and are naturally much more so to the outside public. Yet these same things, very likely, to one who has seen them in actual use, seem, just because of their simplicity, more interesting than the elaborate dancing masks and such like. It has been suggested—possibly the suggestion has been carried into effect—to display these on lay figures; but when it is remembered how very few of these simple articles of dress or ornament are worn at any one time, it is obvious that for their proper display in the suggested manner the number of lay figures which would be required would, for reasons both of economy and of space, make the plan ineffective. A much more feasible plan would be to place by the side of each object, or group of objects displayed, a photograph of the object—preferably of the identical object. A few examples will better explain what I mean:—

The first is a photograph of a Partamona (Ackawoi) red man in a curious dress made and worn for a special festival celebrated by those people and called Parasheera. The dress consists of three parts, which may be described as skirt, cloak, and mask, all made of the bright greenish-yellow, immature leaves of the *Aeta* palm (*Mauritia flexuosa*). Probably there is not an example of this dress in any existing museum; for it is probable that no white man except myself has ever seen it, and I frankly confess that I was deterred, as has often been the case under similar circumstances, from bringing away an example of the dress by the consideration that when seen off the body of the wearer it would look like nothing in the world but a small bundle of withered palm leaves, and would to the uninitiated seem supremely uninteresting (Plate X).

The next example I show you is a picture of a Macusi lad in full dancing dress. Those who are acquainted with the ordinary heaped curiosities of the average ethnological collection will perhaps recognise the typical head-dress of bright parrot and macaw feathers, the loose hanging ruff of alternate black curassow and white egret feathers, and the strip of waist-cloth upheld by a cotton belt, which constitutes the whole of this dress; and such persons will probably recognise that these articles seen, as in this photograph, *in situ*, acquire a new interest.

Again, one of the commonest articles from Guiana seen in museums is the necklace of peccary teeth, much affected by all the Carib tribes. But in now showing you one of the finest specimens of this ornament I have ever seen, it will probably gain very much in interest from the fact that I am able at the same time to throw on to the screen a picture of the actual necklace on the Macusi, named Lonk, from whose shoulders I acquired it. And it may, in passing, be of interest to add that these necklaces, in the manufacture of which only the tusk teeth of the peccary are used so, that, in proportion to its size, each represents a very large number of animals, are most highly valued as heirlooms, and as representing the accumulated prowess not only of the wearer for the time being, but also of his ancestors, for this property is handed down in the male line of descent, and is added to by each holder.

A small necklace of the same kind but only just begun, is shown in the next picture. And in this may be noted too the cotton armlets, fastened with a sort of brooch or disc of turtle bone or shell, which are also among the most characteristic ornaments of the Carib. And in yet another picture not only is the mass of cotton tassels and other such ornaments which characteristically hangs down the back from these same necklaces shown, but further illustrations of the feather head-dress and shoulder ruff seen in a previous picture are seen.

Some little time ago the authorities at Kew asked for some information about an object of seeds from Guiana, supposed to be a necklace, which is in their museum. It was necessary to explain that the thing is not a necklace at all, but is worn across the body from one shoulder to the opposite hip; and it is much easier to explain this when it is possible to show, as I now show you, a picture of the actual thing as worn. For the sake of accuracy, it is as well to add that as a rule two of these ornaments are worn, one from each shoulder, and crossing each other in front and on the back.

Similarly Professor Giglioli had long asked me to procure for him a specimen of the flutes made of bone which are among these Redmen's few instruments of music; and I was very glad, in complying with his wish, and sending him a flute made of a jaguar bone, to be able to send at the same time a photograph of the identical flute in the hands of the True Carib lad who made and used it. Attention may be called, in passing, to the characteristic and elaborately made cotton tassel which adorns this flute as it does so many of the personal adornments of these people.

Probably one of the least interesting objects to the ordinary passer through an ethnological museum is a bow. But it would

acquire a fresh interest if it were shown side by side with a picture of its original possessor and user. In the example here shown the size of the bow as compared with its True Carib owner may be noted.

In short, a good series of photographs showing each of the possessions of a primitive folk, and its use, would be far more instructive and far more interesting than any collection of the articles themselves. Or, if it is desired to illustrate not the possessions but the habits of such folk, the thing can be done in the same way. A few examples from a large series showing the games of these people will illustrate this.

Many of their games are dramatic representations of ordinary incidents in their work-a-day life. One represents their rare and eventful visits to the distant town. Of the many figures in this game one represents the fully manned canoe in which they go on their journey down the big rivers of the country. All but two of the players, seated on the ground, the one behind the other, and each clasping the player in front of him, form a long line, which, by the action of the feet and thighs of its constituent members, drags itself slowly forward, the whole swaying from side to side. In this way—which must certainly involve a considerable amount of somewhat painful friction, considering the hardness of the stony ground traversed and the unprotectedness of the skins of the players—a very realistic representation of the forward rolling motion of a large and well-manned canoe, such as would be used on a real journey, is attained. And the illusion is assisted by the players' noisy imitation of the regular and most characteristic rhythmic beat of the paddles against the sides of the canoe, and of the shouts of the paddlers.

After several other figures, another comes, in which the players, all standing in line, each falls forward on his hands and feet, his thighs the highest part of him, so that the whole line of players, with their closely pressed bodies, forms a long tunnel, through which each player in turn has, as in a well known figure in the old-fashioned dance of Sir Roger de Coverly, to pass, but by creeping. The journey, that is, is nearly over; and the home-comers, leaving the broad river up which they have come so far, have turned into the narrow creek or side stream densely roofed with low hanging trees, which leads directly to their homes; and under this natural tunnel the canoe has to force its way.

Other games to be seen among the Redmen of the borders of Guiana and Brazil are simple representations of the doings of animals. For instance, one represents an aguti in a pen and the attempts of a jaguar to get him out. The players form a

ring, their arms round each other's necks. Inside this circle one of the players crouches, and represents an aguti—a small animal often kept in captivity by the Redmen—inside the pen. Outside the pen another player watches; it is the jaguar looking with hungry eyes on the aguti. He tries to get the aguti out between the bars of the pen, that is between the legs of the ring of players. But the living pen whirls round and round, and it is no easy task for the jaguar to seize the aguti and drag it out.

Yet more curious is the whipping game of the Arawacks. It is played by any number of persons, but generally only by men and boys, for one, two, or three days and nights—as long, that is, as the supply of *peicuri*, the native beer, holds out. The players, with but brief intervals, range themselves in two lines opposite each other. Every now and then a pair of players, one from each line, separate from the rest. One of these puts forward his leg and stands firm; the other carefully measures the most effective distance with a powerful and special whip with which each player is provided, and then lashes with all his force the calf of the other. The crack is like a pistol shot, and the result is a gash across the skin of the patient's calf. Sometimes a second similar blow is given and borne. Then the position of the pair of players is reversed, and the flogged man flogs the other. Then the pair retire, drink good-temperedly together, and rejoin the line, to let another pair take their turn of activity, but presently, and again and again at intervals, to repeat their own activity.

It has been said that the most active players of this extraordinary game are the men and boys. But occasionally the women take a part also. And it is noteworthy that when this is the case a wooden figure of a bird, a heron, is substituted for each of the whips, and a gentle peck with this bird is substituted for the far more serious lash of the whip. I do not know that any equivalent example of the fact that the germ of the idea of courtesy to the weaker sex exists among people even in this stage of civilisation is on record.

Another noteworthy game is played by the Warraus. Each player—and in this game the males only take part—is provided with a large shield made of the leaf-stalks of the *A'ta* palm (*Mauritia flexuosa*). Each pair of players, the one pressing his shield against that of the other, strives each to overthrow the other.

The last set of pictures I propose to show you is a series illustrating the manner of life of the curious and comparatively little known Redmen called Warraus, who inhabit the very wide-spreading swamps which block the mouth of the Orinoco river.

It was of these people that the tale was told, by no less a person among others than Humboldt, that they lived in houses suspended from the tops of the palm trees. Their habits are not quite as strange as that tale would make out, but yet the manner of life is strange enough. It is a people which may in truth be said to depend for their very existence on a palm tree, even though they do not hang their dwellings on these. The palm in question is the *Aeta*, the *Mauritia flexuosa* of botanists, which occurs in vast abundance in the swamps of the Orinoco. The soft pith from the inside of the stem of this palm, the maggots which are bred in the decaying trunks of such of these palms as have been cut down for the sake of the pith, the sap which accumulates and ferments in the hollows of these fallen trunks, together with the soft pulp which envelops the seeds of this palm, form, with the exception of the few crabs and fish which they catch, the sole food of this people, which, unlike the other Redmen of those parts, does not cultivate the soil and hardly ever hunts. A few felled trunks of this palm ranged side by side on the swampy ground affords to these people at once their only foothold and the floors of their houses; and four corner posts having been erected on this platform, a roof of the leaves of the same palm completes the simple dwelling. Practically the only furniture within the house thus formed is the hammock, which is made of the fibre from the young leaves of this same palm.

These strange dwellings are situated, probably for the sake of the safety of seclusion, not near the river banks, but at long distances within the depths of the swamp. Visiting a settlement of these people not many months ago, we had to walk for more than three miles not on the ground, indeed more often than not from five or ten feet above it, but on an artificially formed track of fallen trees. Near the river the path passes over the tops of the wild tangle of mangrove roots, trees having been felled in such a way that their trunks, supported on the arched roots, form a continuous but narrow and slippery path. Yet further in, where the mangrove roots no longer offer their convenient support, the felled trunks are carried over the watery swamp sometimes by being rested in notches cut in the still standing trunks, sometimes on posts run into the soft ground especially for their support.

It probably seems that these must indeed be a wretched people; but indeed it is not so. They are happy and contented. And for their physical appearance let the following pictures answer. The first is of a father and his two sons whom we found in one of the houses visited on the occasion above referred to; the second is of the wife and female relatives of

the same householder; and the last is of a neighbouring householder and his son. In this last picture the cake of *Aeta* bread, that is, the compressed pulp scraped off the palm fruits, may be noted.

Even if the time at my disposal were not exhausted, enough has, I hope, already been said, and enough pictures have been shown to illustrate the contention that the camera, to say nothing of its uses for anthropometric photography, may be utilised by the traveller with anthropological tastes to very great advantage in securing, for exhibition to those of similar tastes who are not lucky enough to be able to travel and see for themselves, accurate records of the appearance, life, and habits of the primitive folk visited. All that remains to be done is to add a few remarks as to the requisite apparatus which may be useful to those going for the first time into untravelled countries.

Nor need these remarks be lengthy, for there is an admirable chapter on the subject, by the late W. F. Donkin, in the latest edition of that useful little book, "Hints to Travellers," published by the Royal Geographical Society. All that it is here proposed to do is to add a very few brief notes on the same subject by one who has had actual and considerable experience in meeting photographic difficulties in a little explored and uncivilised country. Mr. Donkin's notes, apt as they are, seem not fully to meet the case of one travelling quite beyond the confines of civilisation.

Chiefly to be considered in providing apparatus are the circumstances of the country in which these are to be used. It need hardly be said that for a country in which all the requirements of the traveller of every kind have to be taken with him, either in boats, necessarily of limited size, or on men's backs, the portability of the apparatus is an essential consideration; but for a country like Guiana there are other considerations more often overlooked but quite as essential—such as the heat and extraordinary dampness. Another thing which should be taken into consideration, but is still more often overlooked, is that in such a country as Guiana the traveller lives both by day and night in the open air, and under a sky from which very rarely—only indeed during the few night hours when there is no moon and when the stars are obscured by clouds—is no light reflected to his hindrance in changing plates or in any other of the proceedings of the photographer which must be carried on in none but red light. The brief remarks which I shall make on apparatus will be regulated by these considerations.

Any make of camera, provided that it is substantial and as light as may be, will answer. Here the only matter for deliberation is as to the size. At first sight it may seem right to

recommend the use of quite a small camera, say a quarter plate, or even one of the still smaller hand cameras; but I am practically convinced that the most satisfactory size—as indeed Mr. Donkin also recommends—is $7\frac{1}{2} \times 5$, the only disadvantage of this being that, for some mysterious reason, dealers in photographic materials in colonial towns, from which it is often convenient to derive one's material, do not keep plates and other material for this size in stock. As to hand cameras, be they large or small, they are an abomination, and are really much more difficult to work with satisfactory results than are fixed cameras.

As regards choice of lens for our special purpose, where only one is taken, either a Russ's Rapid Symmetrical or one of the new concentric lenses of the same maker seems best. If the cost does not deter, the addition of one of Dallmeyer's new tele-photographic lens will be advantageous.

A more difficult question to decide is as to whether it is better to use glass plates or some of the numerous film substitutes. Taking into consideration the enormous weight of a stock of glass plates adequate for a journey of any length such as we are contemplating, it would at first sight seem quite certain that the preference should be given to the far lighter films; but films, as at present manufactured, have the great disadvantage of not keeping their condition for any length of time in a very hot and very damp climate. Moreover the present films seem in a hot climate to be very difficult to dry after development, which, if the plates are developed *en route*—as should be the case—is a decided disadvantage; nor, in the case of what seem to me otherwise the best of the existing films, i.e., those of xylonite, can this difficulty be overcome by the use of methylated spirit, which is not only bulky to carry but also unfortunately dissolves the substance of which these films are made. On the whole it seems best at present to take a certain number of good glass plates for the more special work, and to take xylonite films for more ordinary occasions, and then to live in hope that the defects in films which I have indicated may speedily be remedied, so that it may soon become possible to use only films.

The next consideration is as to the best means of providing oneself with a safe photographic light for use on such occasions. If it is decided to keep the plates after exposure for development at home it is still an absolute necessity to have some sort of bag or tent of dark material in which to remove from the dark slides such plates as have already been exposed, safely to pack these, and to substitute unexposed plates in the slides. It is often said that this can be done at night by the simple

means of a candle shaded with a piece of some red material ; but for reasons which I have already indicated, this is so seldom as to be practically never possible when travelling under a tropical sky in parts where no houses are. Any of the ordinary forms of changing bag, provided they are sufficiently large and sufficiently ventilated to allow the head and arms to be inserted, will answer for this purpose ; but this presupposes that the only thing wanted is means of changing the plates, whereas, both for the sake of knowing what one is about and because developed plates may be much more easily and safely carried than those which are undeveloped, it is far better to develop one's plates as one goes along, and for this some more convenient arrangement than a simple changing bag is needed. What is wanted is some form of dark tent provided at least with a sink, some sort of shelf on which to put the apparatus with which one is working, say a couple of dishes, a rack for holding the plates from time to time, the vessel in which the necessary supply of water is contained, and the three or four requisite bottles of chemicals, and this must be sufficiently ventilated to allow the user to stay in it for some considerable time. Many portable dark-rooms purporting to meet these requirements are in the market. The best is probably one known as the "Army" dark room, manufactured by Messrs. Davenport and Co., but the weight of this (70 lbs.) practically prohibits its use on such journeys as I am contemplating. One called the "Conical," by the same makers, seems on a more suitable principle, but this has no conveniences in the shape of sink and shelf. It is practically simply a bell tent of suitable dark material ; and if to it were added some form of portable sink and shelf it would probably meet the requirements.

In short, the suitable dark tent for such journeys as we are contemplating has still to be invented. Should anyone be inclined to try his hand at supplying this need, one essential feature to be remembered is that it must be lighted from the outside, being provided with a window of some suitable and unbreakable translucent material outside which an ordinary lamp can be hung.

Two other hints as to material may be given ; one is to use trays of xylonite, with, if spirit is to be used, one tray of ebonite specially for that chemical ; the other is to use for a developer the new one known as amidol, which may best be carried dry.

But quite as important as the choice of material is the means of packing this from time to time. Heat, damp, and insects are the great things to be guarded against, and, once more, portability must be taken into consideration. The camera, dark slides, and all necessary for the actual exposure,

should be carried not in a leather but in a tin case, which should be as air-tight as possible, and in which a few small muslin bags of naphthaline should be kept. And inside this case the lens or lenses should be in a smaller tin case. Many of the ordinary forms of quarter pound tobacco tins are readily convertible for this purpose. Each dark slide should be in its own black velvet bag; indeed the best packing material for the whole apparatus is provided by putting each article in its own separate velvet bag; this, with the "dark cloth," and perhaps a chamois leather and an old silk handkerchief for wiping purposes, providing all that is necessary in the way of packing. The bellows of the camera and all such leather work should be lightly smeared from time to time with carbolated vaseline.

The store of glass plates and films which is taken must also be very carefully packed; in the case of the glass each dozen being put in its own separate tin case of a form supplied probably by many dealers, certainly by Messrs. Wratten and Wainwright, and the lid of which should not be soldered on but protected at the place where it joins the main part of the box by a piece of waxed paper, or better still by a broad indiarubber band, such as is used for similar purpose on the chloride of calcium tubes in which platinotype paper is usually kept. The packets of films should be packed in the same way, except that several dozen may be packed together in one case. The whole store, whether glass or film, should then be wrapped each in a sheet of non-actinic paper, which may often come in useful in the course of the journey, and should be placed, again with a little naphthaline, in an air-tight lockable case.

All air-tight cases which may be used should be provided with outside metal rings and with leather straps running through these for the purpose of easy carriage.

And not the least essential is the provision of a waterproof cover to go over the whole apparatus when it has to be stored at night in the open air camp, under which circumstances it is, by the way, as well to take care that the cases are not put on the ground, but are either hung from the trees or are at least raised from the ground on a platform of branches.

In conclusion I would suggest that this Institute should make it its business to collect and arrange in some suitable manner all photographs of the kind here alluded to, which the travelling anthropologist may secure.

On the SIGNIFICATION of COUVADE.

By H. LING ROTH.

I.

Couvade, or male child-bed, is the name given to a variable custom which prevails among many peoples, and which generally ordains that upon the birth of a child the father must take to his sleeping corner and there behave as though he had suffered the pangs of labour. Occasionally he is only obliged to fast, almost invariably he is restricted in his diet, and generally he is not allowed to follow his usual vocations. In some cases he commences fasting before his wife is confined, or even before marriage; in other cases the woman is also restricted to the use of certain foods. Simultaneously with the husband's lying-in the wife gets up and resumes her domestic duties, but it also happens occasionally that husband and wife lie-in together. The duration of the state of couvade varies considerably—from a few days to several weeks, or up to the time the navel string of the child falls off, or even up to the time at which the child can sit upright. The word *couvade* in its present signification was first used by Dr. E. B. Tylor ("Early Hist. of Mankind," London, 1865), and when the original meaning of the word is remembered it will be thought a more appropriate word could hardly have been adopted.

To the so-called civilised portion of humanity the custom appears exceptionally barbarous in its treatment of the suffering wife, and at the same time it appears extremely absurd. So absurd does it seem to us that everyone on first reading about it smiles incredulously as though some traveller's tale were being recited.

But the effect on the woman is nothing like what we imagine it to be, for among savages we find almost everywhere that women are delivered with little pain or trouble. Quandt, during his twelve years' sojourn in Surinam, knew of no death of a native woman in child-birth ("Nachricht von Surinam," p. 252). Brett says child-birth was no hardship, and quotes the example of an Indian mother rising and going about her duties immediately after delivery ("Indian Tribes of Guiana," p. 101). H. H. Bancroft, the anthropologist, cites cases among the North American Pacific Indian women where child-birth hardly affects the mother ("Native Races of the Pacific States," i, pp. 111, 197, 242, 391, 412, 436, 513, 566, 703, 773; ii, 267, 678). Amongst the Abipones the case was somewhat different; here

the women were accustomed to ride astraddle which habit resulted in malformation and consequent suffering during delivery, but once delivered the woman suffered no more (Dobritzhofer, "Gesch. d. Abiponer," Vienna, 1873, ii, p. 269). The Australian women have little difficulty in child-birth, and death from such a cause is exceedingly rare ("Journ. Anthropol. Inst.", xiii, 1864, p. 280); the same is said of the Sepoy wives in India (Walter Campbell, "Indian Journal," Edin., 1864, p. 361); of women on the Gold Coast (W. Smith, "Voy. to Guinea," Lond., 1774, pp. 211, 266); on the Gambia (Fr. Moore's "Travels," Lond., 1738, pp. 35, 134); in the South Seas (Wilson's "Miss. Voy.," pp. 157, 339); in the African Lake Regions (Burton, "Lake Regions," ii, p. 23); while of the Nicobarese Mr. F. H. Man tells us: "In child-bearing it would seem that from the extreme rarity of fatal terminations or of slow recoveries, labour may be regarded as comparatively easy" ("Journ. Anthropol. Inst.", May, 1889, xviii, p. 378). On the other hand, I am told, Dr. Livingstone mentions a few cases attended with fatal results.

It is a popular belief that the wives of savages, like the majority of those of the civilised working classes, do not suffer in delivery, because being much given to hard work they do not feel the pangs of labour in the same way as the better cared for women of the civilised upper classes. But this appears to be a mistake, for in Dr. Galabin's "Manual of Midwifery" (ed. 1886, p. 84) we read: "The increase in the size of the brain which goes with civilisation and intellectual development involves greater pain, difficulty, and risk in parturition, for it requires a corresponding increase of size in the skull, and although the pelvis undergoes some corresponding enlargement, yet this does not keep up fully with the head. In savage races not only is the head smaller on the whole, but there is a relatively less development of the anterior cerebral lobes, and the forehead is therefore flatter. . . ." Dr. Rollin appears to have been the first to point out that the ease with which the North American Pacific Indian women were delivered was due to the uncommonly large dimensions of the pelvis as compared with that of their European sisters (Perouse, "Voy.," Lond., 3rd ed., 1807, iii, p. 207).

On this part of the question an eminent London professor writes me: "Savages, like animals, undoubtedly suffer much less from most of the ills that civilised flesh is heir to, toothache for instance; indeed if they had such constitutions as many of us possess, in consequence of the accumulations, through many generations, of various morbid tendencies, they could not exist in the conditions of life to which they are exposed. With us the evil and the alleviation go hand in hand to a great extent.

Ceteris paribus, painful labour does seem an indication of a certain amount of elevation in the scale of civilisation. "Return unto thy lore, which says that ever the *most perfect thing* has joy most keen and suffering most sore" (Dante).¹

We may therefore, in the inquiry before us, safely put on one side any reflections as to the apparent indifference of the husband with regard to his wife's sufferings, for the treatment she puts up with is practically no special hardship to her, and keeping our minds free from all consideration as to the woman's share in the custom we shall be better able to understand the peculiar ideas which cause the father to act in so extraordinary a fashion—judged according to our notions. As the custom itself in its various modifications will be best understood by a survey of its geographical distribution, I will proceed to describe its variations under that condition.

II.

1. *Europe*.—Until quite recently it has been believed by anthropologists that the custom not only existed in times gone by in the Basque country, but that it was still to be found there at the present day.² Professor Vinson has, however, shown very conclusively ("Études de Linguistique," Paris, 1878, p. 197) that such is not the case, and as has been pointed out by Dr. J. A. H. Murray ("Academy," Nov. 19, 1892, No. 1072, p. 459), even the accepted statement of Strabo is open to doubt as to whether that geographer really referred to the custom in question. Some years ago I inquired of a Scotch engineer, who had spent many years amongst these people, and he very emphatically denied its existence or that any custom or belief which could in any shape or form be misconstrued into the custom. Nor can I find that any modern traveller mentions the custom as existing in this part of the world. Dr. Ploss ("Das Kind," Stuttgart, 1875, i, p. 128)

¹ As a side issue may we infer from the frequent allusions to painful labour in the Old Testament, especially in the book of Jeremiah, that the Jews have always held a high place in the scale of civilisation?

² According to M. Quatrefages the Basque people practise courvade ("Revue des Deux Mondes," 1850, i, p. 1084). M. Michel repeats Quatrefages word for word, but Dr. E. B. Tylor has pointed out that, according to Vinson, the modern Basques do not practise courvade, and also that the writers on the subject during the last two centuries refer to the Bearnais and not to the Basques ("Researches," 3rd ed., p. 301). Laborde, writing at the commencement of the century, says it was customary among the Cantabrian women, and likewise common among the inhabitants of Navarre ("View of Spain," Lond., 1809, ii, p. 383). C. Val. Flaccus ("Arg. Lib." v, 148) and Apoll. Rhod. ("Argonauts," ii, 1009) state it was an Iberian custom; Diodorus Siculus (v, 14) says it was practised by the natives of Corsica at the beginning of the Christian era. For evidence as to the value of these writers the student is referred to the late correspondence in the "Academy."

says Fr. v. Maltzan describes it in his work, "Sardinien," but I cannot find the reference, and Dr. E. B. Tylor tells me Maltzan distinctly states couvade does *not* exist in that island.¹

2. *Asia.*—In Borneo, Spencer St. John found it among the Land Dyaks of Siramban ("Life in Forests Far East," 2nd ed., i, p. 170). "The husband of the pregnant woman, until the time of her delivery, may not do work with any sharp instrument, except what may be absolutely necessary for the cultivation of his farm ; he may not tie things together with rattans, or strike animals, or fire guns, or do anything of a violent character, all such things being imagined to exercise a malign influence on the formation and development of the unborn child. The delivery is attended by an old woman, called *Penyading*, or mid-wife. A fowl is killed, the family tabooed for eight days, during which time the unfortunate husband is dieted on rice and salt, and may not go out in the sun or even bathe for four days ; the rice and salt diet is to prevent the baby's stomach swelling to an unnatural size."

For the evidence of the existence of couvade in this part of the world it will be as well to refer to the paper on couvade by the late Professor Wilken, who brings forward a mass of new information about the custom in the Indian Archipelago. As he gives so much which is quite new, but which is not easily accessible to English readers, I have translated and give below the most important portions of his paper :—

"The Alfoeros of Boero must be named first. This is what Schouten, who touched on the island in the middle of the seventeenth century, says of the custom : 'The black woman in her confinement also does not remain in her bed, but henceforth goes with her new-born child to the river, and she, when she has well washed both the child and herself, returns to her usual occupation, and yet no harm follows. Still, besides I am truly assured, that as the little darkie of the island of Boero begins to thrive a little, from that time forward the man, as husband of the confined woman, very absurdly pretends to be ill, and allows himself to be right handsomely pampered, so that the blockhead is waited upon more than usual. In the meanwhile the black woman must to her work in order to prepare delicacies for her husband, in order to put the poor fellow on his legs again.' This account was confirmed by Captain Van der Hart. Those

¹ The editor of the "British Medical Journal," September 12th, 1891, p. 620, says : "Isolated instances are found, where the custom occurs, even in England at the present day." I have not heard of any instances, although the following came under my notice at Halifax not long ago :—A woman was confined one night, and the following morning she walked down to the mill where her husband usually worked in order to excuse him, as he had to go to bed because she had disturbed him in the night!

who in 1850 made a voyage round Celebes and to some of the Moluccas met again at Boero with that which W. Schouten had, in his time, come across there, ‘Although,’ says he among other things, ‘there are almost two centuries gone by since W. Schouten visited the island, civilisation does not seem to have gained during this long period so much ground as it has done in other parts of the Indian Archipelago.’ So also V. der Hart confirms the still existing belief in the legend of the holy crocodile amongst the Alfoeros of which Schouten speaks in his itinerary. So also the couvade seems still, according to him, to be practised in the island. ‘As soon as a child is born,’ says he, at least, ‘there is not so much trouble made as with us in Europe; the mother immediately after her delivery goes with her child to the river, both wash themselves, and therewith the affair is finished. . . . Coming back from the river the mother goes about her usual duties; the man, on the other hand, behaves sickly (as infirm) and absurdly, as though he had been confined, enjoys with much gusto the delicacies which are prepared for him by his wife.’ How far the custom is still practised in Boero is not shown. During my sojourn in the island I omitted to make special inquiry about it. In Dr. Riedel’s work there is also no mention made of it. It is said, on the contrary, that after the confinement the man as well as the woman perform their daily work. In the meanwhile it appears, as I have already elsewhere observed, the communications of Dr. Riedel chiefly relate to the Alfoeros of the southern regencies, so that it is very likely that couvade still exists amongst the tribes of the north of that island.¹

“Before leaving the Moluccas we have to refer to some traces of couvade amongst a few other peoples. Thus we find amongst some of the inhabitants of the south-west islands, principally those of Leti and Kissner, it is mentioned that when a woman is confined, superstition forbids her husband for some months to plough, to dig, to hoe, &c.² As a survival of couvade is further to be considered the custom found in the Timor-laut islands where the father at first has to carry and take care of the child, while the mother, after she has bathed, performs her usual housework.³ Amongst the natives of the Uliasers, natives of the Amboynas, we finally see how the man during the preg-

¹ Van der Hart’s account is so similar, word for word, with Schouten that it would seem he had merely copied out the words without ascertaining their present application to the alleged circumstances. Van der Hart does not say he observed the custom, and neither does Professor Wilken say he observed it, so I think we may hold it doubtful whether the custom still exists on the island.

² “Mededeelingen van wege het Nederlandsche Zendeling-genoootschap,” dl. xx, blz. 250, en dl. xxviii, blz. 194.

³ Riedel, “De sterk-en kroesharige rassen tuschen Selebes en Papua,” blz. 304.

nancy of his wife is obliged to abstain from a number of things. He is forbidden, so we read, 'to manufacture objects such as tables, chairs, doors, windows and such like of same nature too, in similar obligation to bring together, to join, or, in order to drive in anywhere, a peg or nail for fear lest the woman might have a difficulty in labour.' So may he, as is told us later on, not be allowed to split bamboos, in order, for example, to make a fishhook, lest the child have a harelip. Nor is it with any eye to the child['s welfare], lawful for him when in sight of the child to open coconuts, to cut hair, or to hold the rudder of a vessel.¹

"That couvade may also have been practised in the Philippines appears from a few customs. Of the tribes of the interior of North Luzon, more especially of the province Bontok, we read to be sure: 'Hat eine Frau geboren, so geht sie mit dem Kinde an den Fluss, wäscht sich und das Kind, kehrt in die Rancherie zurück, übergiebt das Kind dem Manne und geht an ihre Arbeit; nur um Nahrung zu geben, nimmt es die Mutter, der Mann pflegt es, trägt es, in eine Decke gehüllt, auf dem Rücken und empfängt auch die Besuche der Freunde und Bekannten, während die Frau auf dem Felde arbeitet.'² It is further said of the Tagalas that not only the mother but also the father, 'gewisse Regeln aus Rücksicht für seine Nachkommenschaft zu beobachten hat; so muss er den Genuss auffällig zusammen gewachsener Früchte unterlassen, weil seine Frau ihm sonst Zwillinge gebären könnte, was bei den Tagalan durchaus nicht gern gesehen wird.'³

"Among the Bahau Dyaks, in the valley of the Mahakam, the abstinence customs are limited to the period after the confinement. Then the man must not drink any water for three days, and for five months afterwards use no salt, nor chew any *sirih*, nor smoke, while also he is not permitted to eat with anyone, nor to have any intercourse with a woman. As soon as the child has arrived at the age of five months the father is free to follow his ordinary mode of life.⁴ Something similar seems to hold good amongst the Dyaks of Sanggau in Borneo's western regency. At a confinement a father gets into that state known as *pantang* or *pemali*, that is, according to the meaning of the word, in a state wherein certain actions are forbidden

¹ Van Schmid, "Aanteekeningen, nopens de zeden, gewoonten en gebruiken, benevens de vooroordeelen en bijgelooigheden der bevolking van de eilanden Sareeën, Haroekou en Noesa Laut," Tidesschr. v. Nederl. Indië, Jahrg. 1843, dl. ii, blz. 527-528; Ludeking, "Schets van de residentie Amboina," blz. 163.

² Schadenberg, "Beiträge zur Kenntnis der im Innern Nordluzons lebenden Stämme," Verh. der Berliner Gesell. für Anthropol. Ethn. u. Urgeschichte, Jahrg. 1858, blz. 35.

³ Blumentritt, "Sitten und Brauche der Tagalen," Ausland, Jahrg. 1885, blz. 1017.

⁴ Bock, "Reis in vest-en Zuid Borneo," . . . blz. 97-98.

him. Thus for example for four days he is not allowed to leave the village.¹ It is otherwise in the valley of the Barito among the Olo-Ngadju. Also among them the man has to observe some abstinence, but not after, but before the birth of the child. Different things are then forbidden, *pali*, to him as well as to the pregnant woman, so that the child should not suffer the detrimental consequences and be transformed into a monster, *pahingen*. Neither parent must on any account kindle or approach a fire—otherwise the child would come spotted into the world; nor eat any kind of fruit—lest the child should suffer from belly-ache; nor make any holes in wood—lest the child be born blind; nor dive under water, nor hold other bodies under water—lest the child be stifled in its mother, etc.²

Turning to the western portion of the Archipelago we find the same prohibitory customs among the Nias³ people as amongst the Olo-Ngadjus. ‘Eigenthümlich,’ says Dr. Schreiber, ‘ist die Besorgniss des Vaters für sein noch ungeborenes Kind. Man meint, dass zwischen ihm und seinem Kinde die innigste Sympathie besteht, und desswegen muss der Vater bei allen, was er that oder was ihm begegnet, auf sein Kind Rücksicht nehmen.’ They have then a series of customs and prescriptions during pregnancy, which not only the woman but the man must accurately attend to, so that the birth should be attended with good results, and that all possible calamities to the child in later life be warded against. Amongst others they must abstain from many things, must not touch certain foods, nor visit certain spots, nor may they touch certain objects, &c. Likewise they may not kill a pig, snake, hen, or fly, nor plant any bamboo trees, nor drive in a nail anywhere, nor carpenter, nor look at themselves reflected in the water, nor pass by a spot where a man has been murdered, nor by a place where a buffalo or any other animal has been killed, &c. All these unlawful acts are indicated by the word *mamoni*. Should any of these prescriptions be contravened by the man or the woman, various misfortunes would ensue; the placenta might remain behind in the womb, the child might be still-born, or it might be born with a bodily deformity, such as harelip, a stiff neck, crooked legs, cross-eyed, or the child might be attacked with convulsions, skin eruptions or ophthalmia. The non-observance of these decrees may in itself have a prejudicial influence on the child until its fourth

¹ Bakker, “Het rijk Sanggan,” Tijdsch. v. Ind. T. L. en. Vl., dl. xxix, blz. 415.

² Perelaer, “Ethnographische Beschrijving der Dajaks,” blz. 38-39. = Hardehand, Dajakisch Woordenboek,” i. v. *pahingen*.

³ It is a curious fact that while Modigliani (“Un Viaggio a Nias,” p. 556) alludes to couvade as practised elsewhere, in no way does he say that any kind of couvade is practised in the island of Nias.

* Schreiber, die Insel Nias, “Petermann’s Mittheilungen,” dl. xxiv, blz. 50.

year, and the time during which the punishment may fall due depends on the moment when the infringement took place during pregnancy, in such manner that neglect in observing the decree during the first month of pregnancy affects the new-born child during the eighth month of its life, a neglect in the middle of pregnancy affects the child in the second year, while neglect at the end of pregnancy exposes the child to all sorts of dangers in the fourth year of its life. All these mishaps can be averted by sacrifices.¹

"To conclude, we have to bestow our attention on the Orang-Benu-wa of Malacca and the Boeginese and Macassarese. Of the first-named, more especially of the Jakuns, who inhabit the province Johor along the river Madek, we read they have the following superstition which, so long as children are unable to walk, prevents their parents from using as food certain fish and animals; as soon as the little ones have acquired the use of their legs this restriction is removed, and the parents are once more able to indulge in what has so long been *panfang* or forbidden. Should this superstition not be complied with, and any parent eat of any of the forbidden creatures during the period of restriction, the children are supposed to be liable to an illness called *busong*, arising, according to the Malays, from *p'erut-Kembung* or swollen stomach.² Concerning the Boeginese and the Macassarese these people believe that the man, during the pregnancy of his wife, and she also, often behaves whimsically, and has desires, appetites for foods which otherwise are not eaten—a belief, as will presently appear, that may have had some connection originally with couvade.³

"When we trace the cited examples, we see that couvade occurs most completely among the Alfoeres of Boero while everywhere else only a few traces of it can be shown. The man must, either before the confinement of his wife (among the inhabitants of the Oeliassers, Tagala, Olo-Ngadju and the Niasers), or afterwards (among the inhabitants of the south-western islands, the Bahau Dyaks, the Dyaks of Sanggau, and the Orang Benu-wa of Malacca) deny himself many things. In a single case (among the Land Dyaks of Sarawak) the customs of abstinence are observed both before and after the confinement.

¹ Durdik, "Genees-en verloskunde bij de Niasers," *Geneeskundig Tijdschrift voor Nederl. Indië*, dl. xxii, blz. 268-270. Besides in the already cited essay of Dr. Schreiber, further information is found on this custom in the papers of—Chatelin, "Gedadenst en Bijgeloof der Niasers," *Tijdschr. v. Inst. T. L. en Vt.* dl. xxvi, blz. 153-160; Thomas, "Sitten u. Aberglauben auf Nisa," *Globus* xxxix, blz. 14; Sunderman, "Die Insel Nias, Allegemene Missionschrift," dl. xi, blz. 423.

² Harvey: "The Kedau and its tributaries," "Journ. Straits Branch Roy. Asiatic Soc.," 1881, p. 120.

³ Matthes, "Makassarische en Boeginese Woordenboeken," i. vv. *irang* en *ideng*.

Among two folks (the natives of Timor-laut and the tribes of Bontok in North Luzon) nothing more has survived of the custom than the fact that the father in the early days has to carry and look after the child while the mother goes about her usual occupations. In many cases these customs seem to have become mechanical survivals, without any kind of significance being attached thereto. It is different with some peoples (the inhabitants of the Oeliasers, Tagala, Land Dyaks of Sarawak Olo-Ngadju, the Niasers and the Orang-Benu-wa) who have the belief that the rites and commandments to be observed by the man are necessary for the well-being of the expected or new-born child, a belief—just to refer to it in passing—which is met with likewise elsewhere, where couvade exists, among others, as appears from that already stated, the tribes of Guiana."

Marco Polo describes the custom in Zardandan, probably between Thibet and Manzi, where the husband keeps his bed for forty days (Yule's "Marco Polo," second edition, Lond., 1875, book II, ch. xl, p. 70): "And when a woman among them has borne a child, they wash it and swathe it, and she rises and goes about her tasks, whilst the husband takes to bed, keeping the child with him, and lies so for forty days, and is visited by all his kith and kin, and they have great feasting and jollity, and this they do because, say they, the woman has gone through great travail, so it is right that the man also should suffer his share." In this respect Colonel Yule points out (*ibid.*, p. 75) that the Langri, aborigines in the department Weining, also do the couvade for a month, and he states that the Miris men on the Upper Assam border lie-in for forty days. Mr. A. R. Colquhoun states that couvade exists among the Miaoos, in the extreme south-east of Yunnan, but it would appear he is quoting from Marco Polo, for he does not say that he met with or heard of the custom on his travels. He quotes the well-known lines in "Hudibras": "Chineses go to bed, and lie in, in their ladies' stead." Another writer, Mr. W. Lockhart, in a paper on the aborigines of China ("Trans. Ethn. Soc.," London, 1861, p. 181) speaks of a tribe who practise couvade. His assertion rests on the authority of a "Chinese traveller among the Miantsé," whose name is not given.¹ Captain Neale ("Residence in Siam," Lond., 1852, p. 155) refers to the "curious anecdote told of the Chinese, for the truth of which, however, no one has yet been able to vouch. They say when a Chinese lady is blessed with an increase in her family, from the moment

¹ Professor R. K. Douglas refers to this author and the custom among the Miao-Tse and kindred tribes in a paper entitled "Quaint Customs in Kwei-Chow" in "Cornhill Magazine," p. 25, January, 1872. He writes me that so far as he is aware there is no trace of the custom among the Chinese pure and simple.

of her accouchement the unhappy husband is put to bed also, and there detained for forty days, and during this delightful penance he is subjected to all the rigorous treatment of his better half. Should medicine be administered to her he must partake of it also, and he is strictly confined to the same diet she is obliged to undergo."

The Rev. John Batchelor thus describes it among the Ainu : "A curious custom used to exist amongst this people. As soon as a child was born the father had to consider himself very ill, and had, therefore, to stay at home, wrapped by the fire. But the wife, poor creature! had to stir about as much and as quickly as possible. The idea seems to have been that life was passing from the father into his child" ("The Ainu of Japan," Lond., 1892, p. 44).

In Southern India, where Telegu is spoken, the wandering Erukala-vandhu observe the custom : "Directly the woman feels the birth-pangs she informs her husband, who immediately takes some of her clothes, puts them on, places on his forehead the mark which the women usually place on theirs, retires into a dark room, where there is only a very dim lamp, and lies down on the bed, covering himself up with a long cloth. When the child is born, it is washed and placed on the cot beside the father, assafetida, jaggery, and other articles are then given, not to the mother, but to the father. During the days of ceremonial uncleanliness the man is treated as the other Hindus treat their women on such occasions. He is not allowed to leave his bed, but has everything needful brought to him." (The Rev. John Cain, "Indian Antiquary," May, 1874, p. 151.) Dr. E. B. Tylor ("Researches," second edition, p. 301) says : "The account, for which I have to thank Mr. F. W. Jennings, describes it as usual among natives of the higher castes about Madras, Seringapatam, and on the Malabar Coast. It is stated that a man, at the birth of his first son or daughter by the chief wife, or for any son afterwards, will retire to bed for a lunar month, living principally on a rice diet, abstaining from exciting food and from smoking ; at the end of the month he bathes, puts on a fresh dress and gives his friends a feast.¹ The people of this district of India may be described as mainly of the indigenous Dravidian stock, more or less mixed with Aryan Hindu. They are Hinduised to a great degree in religion and habits, but preserve some of their earlier customs, among which couvade, which is not known as an Aryan Hindu practice, must probably be counted. An ancient Asiatic people recorded to

¹ "The details are from a nurse, born of English parents in India, and acquainted with Indian habits."

have practised the couvade are the Tibareni of Pontus,¹ at the South of the Black Sea, among whom, when a child was born, the father lay groaning in bed with his head tied up, while the mother tended him with food and prepared his baths.²

In New Britain "there are certain times when a man of this tribe may not go fishing, when one of his women is *enceinte* or during the fall of the moon In the former case the man must stop at home to prevent the spirits taking away the life of the expected baby, by sucking its breath from it; if the child dies in spite of all his precautions, they say he did not fight for it enough with the spirits" (Powell, "Wanderings in a Wild Country," Lond., 1883, p. 207). This fighting for the life of the new born child sounds something like Paul de la Gironière's account of the Tagals (mixed Malays) under similar conditions, viz.: "One often sees an Indian when his wife is in the throes of childbirth, seated astride on the roof of his house, sabre in hand, cutting and thrusting in empty air, to drive away, as he says, the Assuan. Sometimes he continues this exercise for several hours, until the accouchement is over" ("Twenty Years in the Philippine Islands," Lond., 1853, p. 73).

In his paper on the Nicobar Islanders ("Journ. Anthropol. Inst.", xviii, 368), Mr. E. H. Man (to whom all anthropologists are deeply indebted for his investigations among the Andamanese and Nicobarese) says: "Couvade is practised by all the communities at the Nicobars, including the inland tribe of Great Nicobar; it is by them regarded as a custom of remote antiquity, and is called *oto* in the dialect of the Central Group."

Desirous of obtaining some more specific information on the custom as practised by these islanders, I wrote to Mr. Man, who not only obliged me with the notes which follow, but enhanced my obligation to him by courteously affording me permission to publish them in this Paper. He writes:—

"Although never, I believe, mentioned or even known to previous writers, the singular custom called 'couvade' or paternal lying-in is among the institutions of the Nicobarese; it is called *falgendre* and is practised at Car Nicobar, as also in the Southern Islands of the group; the period extends over some two weeks for a first child, during which time the man may not work nor cook, but lies up like an invalid, while

¹ "Strabo," iii, 4, 17.

²

"In the Tibarenian land,
When some good woman bears her lord a babe,
'Tis he is swathed and groaning put to bed;
Whilst she arises, tends his baths, and serves
Nice possets for her husband in the straw."

Apoll. Rhod. "Argon," ii, 1012.
("Quarterly Review," July, 1868, p. 249.)

he and his wife are fed by their relatives. If a man marries a second wife after having had children by the former marriage, the couvade, upon his again becoming a father, is curtailed to a couple of days."

After writing the above, Mr. Man paid a further visit to the Nicobars (autumn, 1892), where he was able again to substantiate the correctness of his information, and then very kindly wrote me as follows:—

" Among the Nicobarese couvade is likened to the sitting of a hatching hen. At Nancoury the husband must remain as an invalid for about five days, during which he may not work, nor chew betel, nor bathe, and he has his food cooked for him and brought to him. He may feed his wife with what is thus cooked and brought to him. After this and until his wife is able to resume her ordinary duties he must still refrain from leaving the village, or from joining in any entertainments, and he can only perform work of a light nature, but may eat what food he likes.

" A day or more before the confinement, in order to ensure an easy labour, the lashings of the husband's and her own property, e.g., canoes, spears, waterpots, and even of the hut, etc., are cut, and they are renewed soon after the birth of the child.

" The food forbidden to a woman from the time of her confinement till she resumes her duties a month or so later, are fish (including turtles and crabs), fowl and cocoanut. Her drink consists of hot water and her food of vegetables, fruit, rice, pandanus, and pork.

" At Car Nicobar it is much the same, only there the husband remains idle and has his food cooked for him for about one month. He may bathe two days after the birth of his child.

" In some cases husbands consider it advisable to observe greater precautions by commencing to do little or no work a few months before their wife's expected confinement, more especially abstaining from any such work as felling trees and digging holes for hut posts.

" The belief is that if the father failed to observe the custom of couvade the child would be liable to fits, and were the infant to ail or die under such circumstances, it would certainly be attributed to the father's failure to observe the practice.

" Similar observances are found throughout the group. The Nicobarese are not matriarchal. The mother looks after the child, assisted by her female friends. Some slight modifications occur in the case of a man's first child. The observance is less strict in the case of a man who has a child by a second wife, if he has had children by his late wife."

3. *Africa*.—“In the Kingdom of Cassange, where the Giaghi live, the husband takes the place of the woman delivered, as soon as she gets up, and he is then served and cared for by the mother as though he had been confined.” The author of this statement, Father A. Zuchelli, appears to have made it on hearsay, for he continues that if he had met such a man he would have thrashed him (“Relazione del Viaggio e Missione di Congo,” Venezia, 1712, “7th Rel.” § xv, p. 118; in Germ. edit., pp. 165–6) which sounds very much like the thrashing the Abate Gilij said he gave a South American father for his belief in the custom (ii, p. 133), and looks as though Zuchelli were using the latter’s words.

In his work entitled “Africana,” Vol. i, p. 14, the Rev. Duff MacDonald says that in some African tribes “a father has to fast after the birth of his child or take some such method of showing that he, as well as the mother, should take care of the young stranger.” But on my writing to him for particulars, Mr. MacDonald replied under date of 16 Nov., 1891, that in the above passage he was only referring in a general way to peculiar customs, and that he himself had not observed the custom of couvade. Neither Dr. Schweinfurth nor Dr. Junker speak of the custom in their travels, but Dr. Felkin writes me in answer to my enquiries: “In the Shuli district the women are held in high esteem. They are looked up to by the men, and counsel is taken of them in most of the affairs of life. In this district to the best of my belief, couvade really exists, because for some days before and after a child’s birth the father remains in or near the hut, refrains from certain kinds of meat (what I do not know), and generally takes care of himself, that the infant may not be harmed. Again amongst the Dinkas a somewhat similar custom obtains. For two or three days after the birth of a child, the father remains in the hut, pays great attention to it, and nurses it. My attention was not called to the subject in any other place, and I made no special inquiries with regard to the custom (28th September, 1891).”

Dr. Ploss (“Das Kind,” p. 130) says H. Bancroft describes the custom in South Africa, but as H. Bancroft only wrote about America, the reference here must be a misprint.

The Rev. J. Sibree informs me that he has not met with so much as a trace of couvade in Madagascar, and he has lived there nearly twenty years and is intimately acquainted with the customs of the natives.

4. *America*.—In the New World the custom is met with almost throughout the length and breadth of the Continent.

In Greenland the husbands of the women suffering delivery

"must forbear working for some weeks, neither must they drive any trade during that time" (H. Egede's "Greenland," Lond., 1745, p. 192).

According to Mig. Venegas, the Californian women, beyond washing themselves and the newborn child, "went about their duties as usual, and in other particulars observe no manner of caution, going to the forest for wood and food, and performing every other service the husband wanted; whilst he in the meantime lay in his cave, or stretched at full length under a tree, affecting to be extremely weak and ill; and this farce continued for three or four days" ("Hist. of Calif.", Lond., 1759, i, pp. 81-2). Among the Central Californians, "when childbirth overtakes the wife, the husband puts himself to bed and there, grunting and groaning, he affects to suffer all the agonies of a woman in labour. Lying there, he is nursed and tended for some days as carefully as though he were the actual sufferer" (Bancroft, "Native Races," i, p. 391,) but among the Southern Californians "although the husband did not affect the sufferings of labour, his conduct was supposed in some manner to affect the unborn child, and he was consequently laid under certain restrictions, such as not being allowed to leave the house, or to eat fish and meat" (*ibid.*, p. 412). Under the same circumstances the Lagunero and Ahomana husbands "remain in bed for six or seven days, during which time they neither eat fish nor meat" (*ibid.*, p. 585).

In Ecuador "the couvade is rife among the Jivaros; and at the birth of a child, the mother has to undergo all her parturient troubles outside the house, exposed to the elements, whilst the husband quietly reclines in the house, coddling and dieting himself for some days until he has recovered from the shock produced upon his system by the increased weight of his responsibilities as a father. This custom is still in some measure extant in many of the civilised villages on the Solimons, where amongst the Tapuyos and even degrees more approached to the whites, the father on the birth of a son or daughter lays himself in the hammock, from which he will not move on any consideration to do any kind of work, nor especially to touch any cutting instrument, fearing thereby to exercise evil influences upon the healthy development of the child" (A. Simson, "Journ. Anthropol. Inst.", ix, 1880, p. 388). Mr. Simson also describes the custom among the Piojés of the Putumayo, thus: "Another very curious custom is that of both father and mother fasting for days after the birth of a child. Sometimes this is kept up so long that it is a wonder that at least the mother does not sink under the debilitating ordeal. If the father is away from his wife he also fasts three days on hearing the news that she has

borne him a child, as some of the Piojés assured me" ("Journ. Anthrop. Inst.", viii, 1879, p. 222).

In the West Indies, Thevet appears to have been the first to mention the custom as existing among the Caribs ("Cosmographie Universelle," Paris, 1575, ff. 915–916). Rochefort gives the following account of it: "C'est qu'au même tems que la femme est delivrée le mary se met au lit, pour s'y plaindre et y faire l'accouchée: coutume, qui bien que sauvage et ridicule, se trouve néanmoins à ce que l'on dit parmy les paysans d'une certaine Provence de France. Et ils appellent cela faire la courade. Mais ce qui est facheus pour le pauvre Caraïbe, qui s'est mit au lit au lieu de l'accouchée, c'est qu'on luy fait faire dicté dix ou douze jours de suite, ne luy donnant rien par jour, qu'un petit morceau de cassave, et un peu d'eau, dans laquelle on a aussi fait bouillir un peu de ce pain de racine. Après il mange un peu plus: mais il n'entame la cassave qui luy est présentée, que par le milieu durant quelques quarante jours, en laissant les bords entiers qu'il pend à sa case, pour servir au festin qu'il fait ordinairement en suite à tous ses amis. Et même il s'abstient après cela, quelquefois dix mois, ou un an entier, de plusieurs viandes comme de Lamantin, de Tortue, de Sourcœur, de Poules, de Poisson, et de choses delicates: craignant par une pitoyable folie, que cela ne nuise à l'enfant. Mais ils ne font ce grand jeusne qu'à la naissance de leur premier enfant. Car à celle des autres, leurs jeusnes sont beaucoup moins austère et beaucoup plus courts, n'étant d'ordinaire que de quatre ou cinq jours au plus . . . Quelques uns de nos Caraïbes ont encore une autre folie: et c'est bien pis que tout le reste pour le pauvre père à qui il est né un enfant, car à la fin du jeusne, on luy scarifie vivement les epaules avec une dent d'Agouty. Et il faut que ce miserable, non seulement se laisse ainsi accomoder, mais que même il le souffre sans temoigner le moindre sentiment de douleur. Ils croient que plus la patience du père aura paru grande dans ces épreuves, plus recommandable aussi sera la vaillance du fils: Mais il ne faut pas laisser tomber à terre ce le noble sang, dont l'effusion fait aussi germer le courage. Aussi le recueillent ils en diligence, pour en frotter le visage de l'enfant, estimant que cela sert encore beaucoup à le rendre généreux" ("Hist. Nat. et Mor. des Iles Antilles de l'Amérique," Rotterdam, 1665, p. 550). Du Tertre, whose "Histoire Générale des Antilles," &c., was published in Paris two years after Rochefort's work, gives an account of the custom in almost identical words (ii, pp. 371–374). Labat mentions the custom, but states he did not see it carried out ("Nouveaux Voyages," La Haye, 1724, ii, p. 123). Chavallon, writing one hundred years later than Rochefort, says that among the Caribs in Martinique, as

soon as the woman has brought forth, she gets up and looks after all the requirements of the household while the husband lies-in and remains in bed for some time in her stead ("Voyage à la Martinique," Paris, 1763, p. 53).

Of the existence of the custom in South America, Ant. Biet, writing in the middle of the seventeenth century, says: "Quand la femme mariée reconnoist qu'elle est enceinte, elle se déclare à son mary qui fuit alors beaucoup de superstitieuses, craignant que l'enfant qu'elle porte ne perisse. Il s'abstint de manger de plusieurs choses; il fait une pénitence étroite; il craint de toucher les gros poissons comme le Lamantin, la Tortue, et semblables. Ils ne veulent point s'approcher de ceux qui les pechent, de peur, disent ils que leurs enfants ne meurent et que leurs ames n'entrent dans ces poissons," and he continues, when the woman has been delivered "Le mary pend son lit au plus haut de la case, s'y va coucher; et fait l'accouchée six semaines, et au lieu de faire servir la femme qui ne garde point le lict, elle le sert huymesme durant tout ce temps-là, pendant lequel il ne se lève que pour aller à ses nécessitez. Quand il passe au milieu de tous ses cohabitans, il ne les regarde pas, ne levant pas les yeux. Il jeûne étroitement pendant ces six semaines, ne mangeant que fort peu, d'où vient que quand sa couche est faite, il se lève maigre comme une squelette: alors il sort et est obligé d'aller tuer une sorte d'oiseau pour sa relève" ("Voy. de la France Equinoxiale en l'Isle de Cayenne," Paris, 1664, pp. 389, 390). Ph. Firmin is the next author who writes about the custom. His account is to be found in "Description de Surinam" (Amsterdam, 1769, i, p. 81). But Quandt's account of the custom as practised in Surinam differs in a material point from that of all previous writers, inasmuch as he states that the husband, not being allowed to do this and that and so on, finds it best to go to bed, and then he is certain to be out of temptation's way, thus: "Denn wenn eine Indianer Frau ein Kind bekommt darf ihr Mann keinen Baum fällen, keine Flinte losschiessen, und kein grosses Wild jagen, weil sonst das Kind krank werden und sterben würde. Es ist ihm nur erlaubt, in der Nähe mit dem Pfeil kleine Vögel zu schiessen und kleine Fische zu angeln. Er ist also mehrentheils zu Hause, und da seine Hangmatte gewöhnlich sein Stuhl und sein Lager ist; so ist ihm in dieser missingen Zeit nichts bequemer, als in derselben zu liegen, und die Frau sitzt auf der Erde im Sande, um ihre Hangmatte nicht zu verunreinigen, zumal sie gemeinlich dass neugeborene Kind darin liegen hat" ("Nachricht von Surinam," Görlitz, 1808, pp. 252-3).

Richard Schomburgk's account of the custom in British Guiana reads very much like that of Rochefort written 200

years previously, differing mainly in the fact that, whereas the latter states the friends of the husband scratch him with Agouti teeth, the former tells us the wretched man is not allowed to scratch himself with his own nails, but may do so with Agouti teeth. The similarity between these two accounts is explained when we remember that Dr. Brinton has pointed out that the aborigines of Hispaniola or Hayti (a part of the Greater Antilles) described by Rochefort were Arawaks, practically the same people described later on by Schomburgk.¹

The Rev. W. H. Brett's description of the custom is interesting from several points of view. He says: "Some of the *men* of the Acawois and Caribi nations, when they have reason to expect an increase of their families, consider themselves bound to abstain from certain kinds of meat, lest the expected child should in some mysterious way be injured by *their* partaking of it. The *Acouri* (or Agouti) is thus tabooed, lest like that little animal, the child should be meagre; the *Haimara* also, lest it should be blind, the outer coating of the eye of that fish suggesting film or cataract; the *Labba*, lest the infant's mouth should protrude like the labba's, or lest it be spotted like the labba, which spots would ultimately become ulcers; the *Marudi* is also forbidden, lest the infant be still-born, the screeching of that bird being considered ominous of death. Both the above tribes and the Waraus consider it their duty to abstain from venison *after* their wives are confined, lest the child on arriving at manhood be found wanting in speed, exemplified by the slow pace which the female deer when she has a young fawn at her feet is obliged to observe. Such are some of the dietetic rules laid down for the *men* by their system of superstition. They are probably observed by very few in their full rigour, for the forbidden animals form a large proportion of the Indian's bill of fare as found in the forests, and a Carib or other polygamist with three or four wives might be debarred from tasting them during the whole, or the best period, of his manhood" ("Indian Tribes of Guiana," Lond., p. 355). Mr. E. F. im Thurn has quite recently fully confirmed and amplified Mr. Brett's statements ("Among the Indians of Guiana," Lond., 1883, p. 218), and adds that the Macusi abstain from venison even before marriage.

Southeby, quoting as his authority the "Notícias do Brazil," says: "Immediately upon a woman's delivery the father takes to his hammock, covers himself up, and is nurst there till the navel string of the infant has dried away; the union between him and his progeny is regarded as so intimate that the utmost

¹ "The Arawak Language of Guiana in its Linguistic and Ethnological Relations." By D. G. Brinton, Philadelphia, 1871.

care must be taken of him lest the child should suffer" ("History of Brazil," i. p. 238). Von Tschudi mentions casually that at childbirth the Peruvian husband goes to bed and allows himself to be cared for a few weeks ("Peru," 1846, ii, p. 235). According to Spix and Martins ("Reise in Brasilien," Th. iii, p. 1339), "Wie die Cariben und die alten Tupis haben die männlichen Mundurucus die Sitte, sich bei der Geburt eines Kindes mehrere Wochenlang in die Hangmatte zu legen und die Pflege der Wöchnerin, so wie die Besüche der Nachbarn, anzunehmen." Among the Passés "die Wöchnerin bleibt nach Geburt ein Monatlang im Dunkeln, und ist, wie der Gatte, auf die kost von Mandioca, Beiju, und Tocacaz (Caldoz de Farinha), angewiesen. Dieser farbt sich schwartz und bleibt während der ganzen fast Zeit oder bis dem Säuglinge die vertrocknete Nabelschnur abfällt, sechs bis acht Tage in der Hangmatte" ("Martius' Ethnographie," i, p. 511). Dobritz-hoffer tells us the Abipones followed the custom ("Gesch. der Abiponen," Vienna, 1783, ii, pp. 273-5). Speaking generally of the Brazilians, Laet, writing in 1633, says: "After the birth of the child father and mother fast until the navel has healed, and sometimes up to the eighth day" ("Novus Orbis," Book XV, ch. xii, p. 544). The male Puris, Coropos and Coroados do not lie-in, but fast with their wives at childbirth ("Spix and Martins,' op. cit.," Theil i, p. 381), and the Marauhas, Omagnas, and Cauixanas behave similarly ("Martius' Ethnographie," i, pp. 427, 428, 441, 482).

Regarding the custom among the Coimbias in Peru, St. Cricq's words are: "A l'heure de son accouchement, quand la femme, abritée par son moustiquaire, est seule à lutter contre la douleur, l'époux, accroupi au seuil de la hutte, attend dans une immobilité complète et l'observation du jeûne le plus rigoureux que sa compagne soit délivrée et lui annonce le sexe de l'enfant." If it be a girl the father spits on it, if a boy the mother is congratulated; on returning from washing "elle félicite à son tour le père de l'enfant," that is, if it be a boy ("Bull. Soc. Géog." Paris, 1853, 4th Series, vi, p. 288).

III.

From this survey it would seem in the first place that we want a great deal more information about the custom in the widely isolated cases where it has been reported, and, secondly, that the authenticity of some of the reported cases is doubtful in consequence of authors repeating their predecessors' tales, as Colquhoun did Marco Polo's, and V. der Haart did Schouten's. I should not be at all surprised if ultimately both Polo's and

Schouten's accounts turned out to be myths, both these travellers making their records at a time when the Old World was full of the tales of the New, so that in the end we may yet find the custom is not, nor ever has been, so widespread as is generally supposed to have been the case.

In the Old World, couvade is only met with in isolated and widely separated localities; in the New World, it is to this day, more especially in South America, distributed over the length and breadth of the land. In Australia it appears to be positively unknown. In Asia we find it mostly in places where, owing to long isolation, customs, may, so to speak, have become crystallised; but the custom cannot by any means be attributed to such isolation, for the Caribs who follow the custom in its fullest extent are of a warlike disposition, and for the four hundred years during which they have been known to Europeans they have been known as rovers and are consequently by no means an isolated people.¹ The custom does not appear to exist or to have existed among those people to whom the term "most degraded" is erroneously applied, people which were better described as savages living in the lowest known forms of culture, such as the Australians, Tasmanians, Bushmen, Hottentots, Veddahs, Sakeys, Aetas, and Fuegians. Neither does the custom exist among the so-called civilised portion of mankind. In other words couvade appears at first sight to be limited to peoples who hold an intermediate position between those in the highest and those in lowest states of culture. As such it may be considered to represent an intermediate or transition state of mental development.

But to follow out the geographical distribution it may be well to consider the purity of descent of the races affected. In Asia, Africa, and in Oceania, the populations are so mixed that we frequently find the most dissimilar branches of mankind living side by side as close neighbours, and perhaps only in such isolated cases as those of the Andamans, Tasmanians, Aetas, Veddahs, and Ainu, &c., can we be tolerably certain that we are dealing with a fairly aboriginal population *in situ*. While in Africa at the present day "there is a principle of unity which embraces well nigh all the population," that country has

¹ A curious illustration of the way in which peoples living side by side influence each other is given by Wallace ("Amazon and Rio Negro"—Appendix), who, after speaking of the beliefs regarding the actions of pregnant women, says: "Many of these peculiar practices and superstitions are retained with much tenacity even by those Indians who are nominally civilised and Christian, and many of them have been even adopted by the Europeans resident in the country. There are actually Portuguese on the Rio Negro who fear the Indian *págs*, and who fully believe and act on all the Indian superstitions respecting women."

been ethnologically revolutionised, but within itself, almost as much as Europe or Asia. In America we have the fairest evidence for believing that not only is the so-called Indian population aboriginal, but that it forms one homogeneous whole, although some ethnologists are still inclined to regard it as a subdivision of the Mongolian. With regard to Australia and Tasmania, Messrs. Howitt and Fison, if I understand them correctly, seem to take it for granted that Australia was uninhabited when the present black population spread over the country ("Migrations Kurnai Ancestors," "Journ. Anthropol. Inst.", May, 1886, and the same Journal, xii, Aug., 1882, p. 40), but the result of other inquiries tends to indicate that the Australians drove their predecessors, the late Tasmanians, out of the mainland ("Aborigines of Tasmania," Lond., 1890, ch. xii; Quatrefages, "Races Humaines," p. 368; Flower, "Presidential Address," pp. 384–386, Anthropol. Inst., 1885).

Geographically speaking therefore, we can understand how it is that in America the custom is so widespread, and, on the contrary, that in Asia and Oceania it is so isolated, but we have difficulty in accounting for its rarity in Africa, if it really do exist there, and its absence in Australia. In the former continent we should expect to find it in isolated corners as we do in Asia, while in Australia we should expect to find it covering the length and breadth of the land as in South America. Of the Tasmanians, it is now unfortunately apparently too late to discover whether they had any custom similar to couvade.

To sum up, we appear to get no explanation of the origin or distribution or meaning of the custom when we examine it from a geographical standpoint. Nor does, on the other hand, an ethnological examination throw much light on the question.

IV.

The latest system of the classification of mankind is, I believe, that adopted by M. Quatrefages in his "*Histoire des Races Humaines*," published at Paris in 1889. In this classification he has practically confirmed the general arrangement described by Prof. Sir William Flower in his presidential address to the Anthropological Institute in January, 1885. But while Sir Wm. Flower strictly adheres to three great primitive types with a permissible fourth (the American) M. Quatrefages, more for the sake of ease in handling his subject, makes three great divisions and two sub-divisions, consisting of the Mixed American and the Mixed Oceanic races. The divisions are as follows:—Black, Yellow, White, Mixed Oceanic, and American.

i. The Black Race comprises the Indo-Melanesian (Negrito, Dravidian, Tasmanian, Papuan, &c.), the Australian, and the African. ii. The Yellow Race comprises the Siberian (Mongol, Turk, &c.), the Tibetan, Indo-Chinese, and American-Inuit. iii. The White Race comprises the Allophyllic (Canaries, Asiatico-American, Sinic, Indonesian, Circassian, Euskarian, &c.), the Finn, the Semitic, and the Aryan. iv. and v. The terms Mixed Oceanic and American explain themselves.

If we now allocate the peoples who practise the custom of couvade in this classification, we get the following result:—

- i. The Black Race; Dinkas, Shulis.
- ii. The Yellow Race; Esquimaux (Greenlanders), Miris, &c.
- iii. The White Race; Tibareni.
- iv. The Mixed Oceanic Race; Mino-Tze, Malays, Dyaks, Tagals, Nicobarese, N. Britain Islanders, &c.
- v. The American Race; Most tribes probably.

The above tells us very little. It would appear we have a couple of supposed cases among the Black Race, a few among the Yellow Race, none authentic among the White Race, and numerous cases both in the Oceanic and American Races. Ethnologically, therefore, we are unable to gather any information regarding its origin.

V.

The reasons assigned for practising the custom are as varied as the custom itself, and the explanations offered by travellers who have met with it, as well as by those who have studied it, are widely divergent. Marco Polo was informed that the origin of the custom in Zardandan was due to the fact that the woman having had a hard time of it, it was only fair that the man should have his share of the suffering (*op. cit.*, book ii, ch. 40, p. 70). In the Antilles, Du Tertre states the father was debarred from a variety of animals as food lest by his partaking of them the child should afterwards display as vices the peculiar weaknesses of these animals (*op. cit.*, pp. 373–4). This interpretation agrees very thoroughly with that found to exist in Guiana by Messrs. Brett and im Thurn. Biet, as we have seen, says the father is not allowed to eat certain large fish, for fear in case the child were to die, its spirit would enter into one of these fish. Quandt thought male child-bed arose out of the desire to keep the men near their wives at childbirth, in order to help them; the men being prevented from bringing home large fish or game, as the women should at this period not be overburdened with work

(*op. cit.*, p. 253), and the men, being further debarred from exercising their usual vocations and restricted in their diet, found it best to take to their hammocks altogether. Chavallon argues that, as the Caribs believe that certain foods partaken by the father will affect the welfare of the new-born child, it follows that other acts on the part of the father will likewise have their effect hence from mere dietetic restrictions the father proceeds to take to his hammock, where he has not the means, and is out of the temptation, to expose his child to danger. He says some might conjecture that the law against certain foods was established especially so that the women should also abstain, and thereby keep the child from participating in evil results. Firmin (*op. cit.*, i, p. 81), thought simply the custom a proof of the servitude of the woman and of the conceit of the man.

Spix and Martius say that among the Mundurucus the custom arose from the idea these people entertained that the child is solely the father's, the mother's share in the bearing and bringing forth being likened unto that of the earth, which in plant life simply receives the seed. This is the view Southey found recorded, thus: "It was their opinion that the child proceeded wholly from the father, receiving nutrition indeed and birth from the mother, but nothing more (*op. cit.*, i, p. 218), from which Dr. Ploss argues the custom may have arisen out of a desire on the part of the community to make the father answerable by his conduct for the welfare of the child (*op. cit.*, i, p. 138).

When Dr. E. B. Tylor first investigated the custom, he wrote—the explanations "almost all involve giving over the parentage to the father, and leaving the mother out of the question. This was an ancient Egyptian opinion, as Southey points out when mentioning its most startling development in the practice of the Tupinambas of Brazil, who would give their own women as wives to their male captives, and then without scruple eat the children when they grew up, holding them simply to be of the flesh and blood of their enemies." ("Early Hist." Lond., third ed., p. 299.) Among the Khonds, however, this idea is quite reversed, for their Meriah captive women are allowed to live until they have borne children to Khond fathers; these children are then reared for sacrifice, but never put to death in the village of their birth," &c. (John Campbell, "Wild Tribes of Khondistan," Lond., 1864.) Nevertheless were couvade an Australian institution, Southey's view would appear to be supported by the statement of Mr. Howitt, who, writing on the Australian class systems, says: "It is necessary to keep in view the fact that these aborigines, even while counting 'descent,'—that is counting the class names—through the mother, never for a

moment feel any doubt, according to my experience, that the children originate solely from the male parent, and only owe their infantine nurture to their mother" ("Journ. Anthropol. Inst.", xii, May, 1883, p. 502).

In a very able and remarkable paper read before the British Association in 1889, Dr. E. B. Tylor gives support to the old interpretation of the custom of couvade as expounded by Bachofen: "I must now," he says, "argue that the original interpretation of the couvade given by Bachofen in his great treatise in 1861, and supported by Giraud-Teulon, fits substantially with the facts, and is justified by them. He takes it to belong to the turning-point of society when the tie of parentage, till then recognised in maternity, was extended to take in paternity; this being done by the fiction of representing the father as a second mother. He compares the couvade with the symbolic pretences of birth, which in the classical world were performed as rites of adoption. To his significant examples may be added the fact that among certain tribes the couvade is the legal form by which the father recognises a child as his. Thus this apparently absurd custom, which for twenty centuries has been the laughing-stock of mankind, proves to be not merely incidentally an indicator of the tendency of society from maternal to paternal, but the very sign and record of that change."¹

The above explanation of the custom of couvade has an almost irresistible power of convincing us of its correctness, for firstly it interprets the custom as "a very sign and record" of mankind's transition from one social state to another, in other words, it is made symbolic of one of the most important social changes mankind has been a party to, and secondly, it apparently settles a question which has hitherto been a veritable Chinese puzzle, and one which anthropologists have long attempted in vain to solve.

In a small way this new interpretation of the custom appears to be supported by the action of certain tribes, the Mundurucus for example, among whom "couvade is the legal form by which the father recognises the child as his." But against this one apparently reasonable explanation given by the savages themselves we have twenty-seven² others which, if not reasonable to us, are equally as reasonable to the tribes who hold them as that of the Mundurucu is to him. Under such circumstances it will

¹ In an explanatory note Dr. E. B. Tylor relegates his old explanation that the custom of couvade implies a physical bond between parent (father) and child to a secondary position, so that "the sympathetic prohibitions may be interpreted as originally practised by the mother only, and afterwards adopted by the father also ("Journ. Anthropol. Inst.", xviii, Feb. 1880, p. 256), thus inverting Chevalier's view.

² I have taken this figure, as 28 represents the sum total of tribes practising couvade referred to in Dr. E. B. Tylor's paper.

be more logical to decline to accept any explanation coming from the people themselves, but to argue from the known surroundings of the people, as such surroundings and belief react on the belief in couvade. In British Guiana couvade is still practised to this day by the Arawaks, Macusi, Warraus and True Caribs, but while the Arawaks count descent strictly in the female line, the other appear not to do, so that arguing from the Arawak two customs (couvade and female descent), it cannot by any means be said that couvade is the sign of the change from the maternal to the paternal, for among this tribe we have as yet no visible sign of any such impending change (see Table II). An examination of the custom as practised in Melanesia would seem to lead to the conclusion that couvade and the change go hand in hand, were it not for Mr. Codrington's very emphatic assertion that the people who indulge in couvade are still decidedly matriarchal (Table III, col. 3).

But if Bachofen's theory as to the origin of couvade be the correct one, how is it that (while the greater, if not the better, part of the evidence, which is leading anthropologists to the conclusion that mankind generally traversed the stage of descent through the females prior to descent through the males, comes from the study of the Australians) in that important paper on "From Mother-Right to Father-Right," by Messrs. Howitt and Fison ("Journ. Anthropol. Inst.", Aug., 1882, xii) we are not favoured with a single word about couvade, or anything at all approaching it? From the paper of these gentlemen, and from succeeding papers by Mr. A. W. Howitt, we learn that a large portion of the Australians is in the transition stage (the Maternal-Paternal of Dr. E. B. Tylor), yet we find no trace of the custom among these people, nor do we indeed find anywhere any reference at all to it in any account of the customs of these aborigines.

VI.

Mr. im Thurn has suggested (*Timehri I*, p. 313) that as there are other practices followed by savages, apparently allied to couvade, these should be included in the study of the custom. He then goes on to relate a case known to him where an Indian woman with child was not allowed to eat of the booty obtained by her husband's dog lest the dog lose its power of hunting, a case which was also met with by Mr. R. L. Kingston (*ibid.* II, p. 355), and also reported by Mr. A. R. Wallace ("Amazon and Rio Negro," London, 1854, pp. 501-2). Mr. im Thurn also says (*ibid.*, I, p. 313) that a pregnant Indian woman may step over the most poisonous snake and it will not bite her. This

TABLE I.

Brief recapitulation of the conduct of husband and wife (amongst tribes who practice courage) immediately preceding, and during and following childbirth.

Tribe (or country).	Immediately preceding.			During and following.		
	Husband.	Wife.	Husband.	Wife.	Husband.	Wife.
Celebes	Lies-in ; is fed with tit-bits to strengthen him.	Attends on husband.
Borneo	In dieted and restricted in his actions.	.. .. ..
Zandanan, Tagali, Micis, and Minas, Chinese (Manchu)	Keeps his bed for forty days	.. .. ..
Chinese (?)	Lies-in ..	.. .. ..
Brahmanandhu	Ditto ; receives same treatment as wife.	.. .. ..
Thaeroni	Dresses up a woman : lies-in ; specially treated.	.. .. ..
New Britain ; Tagala	Greens in bed ; tended by wife ..	Waits upon husband.
Nicobares	Remains at home to fight against spirits wishing to destroy child.	.. .. ..
Equinotux	Restricted in diet, food cooked for him, detained in villages, etc.	.. .. ..
Californians	Restricted in work and trade	.. .. ..
Central California	Lies-in and affects illness ..	.. .. ..
					Affects to be in labour, and is tended as such,	Goes about as usual, and attends on husband.

Laguna, Alomata	"	"	"	"	"	"	"
Caribe ..	"	"	"	"	"	"	"
Martinique ..	"	Restricted in diet least child should suffer the peculiarities of the animal food.	"	"	"	"	"
South America ..	"	"	"	"	"	"	"
Surinam ..	"	"	"	"	"	"	"
Arawaks ..	"	Restricted in diet like above South Americans.	"	"	"	"	"
Aewoi and Caribi	"	Abstains from venison meat.	"	"	"	"	"
Macaw ..	"	From MARMALADE,	"	"	"	"	"
British Guiana ..	"	Is unable to fish successfully.	"	Must not eat of food caught by husband's dog least dog lose power of hunting.	Ditto ..	"	"
Brazil, Peru ..	"	"	"	"	Ditto ..	"	"
Mundurucus ..	"	"	"	"	Ditto; To prove paternity of child.	"	"
Pasés ..	"	"	"	"	Ditto, and is dictated like wife	"	"
Coimbus, París ..	"	"	"	"	Fasts ..	"	"
Jiraros and others ..	"	"	"	"	Lies-in; must avoid use of sharp instruments.	"	"

Goes about as usual.
Attends on husband.

Lies-in and affects labour; restricted in diet; shoulders scrafified.

Goes about as usual.
Attends on husband.

Fasts.

Lies-in ..

TABLE II.
COUVADE IN BRITISH GUIANA. Tabulated chiefly from Mr. J. M. Thurnam's " Indians of Guiana."

Name of Tribe, 163.	Signs of change from matriarchal to patriarchal state.	System of Marriage and Descent,	Uxorilousness.	Couvade.	Characteristics.
Waiwai ..	(?)	(?)	Eight to ten wives, 223. Very polygynous (Brett, 276).	The father abstains from venison after the birth of the child (Brett, 266),	A despised people, very easily in their habits, 168. Field-dwellers, 203. Canoe makers of the coast, 271.
Arwak ..	These alone have till very recently preserved their lines of family descent, same what strictly, 175.	Descent solely and rightly in the female line; no intermar- riage with relations on the mother's side permitted, 165.	Formerly poly- gamous (Brett, 275).	At the birth the father takes to his hammock, and the mother goes on with her duties (Brett, 101). In Surinam the father takes to his hammock be- cause he is so restricted in his actions after the birth (Quinch, 252).	The most civilised of all the tribes, 168. Are losing their arts, due to close re- lations with Europeans, 272.
Wapianas ..	(?)	(?)	Polygynists, 223	(?)	Great traders, 169. Canoe makers of the interior, 271.

True Caribs. (P)	Mostly marriage by capture, 186-7.	Not usually polygamous, 223. Very promiscuous (Brett, 354).	The father abstains from various foods before the birth and from <i>nausica</i> after birth (Brett, 355-356). The island Carib father lies in his hammock after the birth (Thorez, 315-316).		A very secluded people, shy, and much dreading, 109. Have little intercourse with others, live in a miserable condition, 278.	A gentle people, nearly as cleanly as the Arawaks, 170. Make overall poison, and cotton hammocks, 272.	A bold people, 109. Lead the hardest lives, and are least affected by European civilisation, 188. Grow and spin cotton, 272.
			Do.	do.			
Akawoi ..	(P)	Not usually polygamous, 223. Polygamy unknown (Brett, 276).	Do.	do.	Do.	do.	Do.
Macouai ..	(P)	Mostly marriage by capture, 186-7. Principles of Arawak system, 187.	Not usually polygamous, 223.	Do.	The father is restricted in his food and takes to his hammock when the child is born, 218. He abstains from certain foods before marriage, 222-223. The father takes to his hammock with the mother as soon as the child is born (Schomburgk).	Do.	Do.
Arecuna ..	(P)	Mostly marriage by capture, 186-7.	Do.	Do.	(?)	Do.	Do.

TABLE III.

CULTURE IN MELANESIA. Tabulated from the Rev. R. H. Codrington's "The Melanesians."

Race.	Locality.	Inheritance.	Couvade.
"In none of the places you refer to (San Cristoval, San, Banks' Group, Ponape, east, Lepers' Island) is there anything visibly Polynesian, yet I have no doubt there is a certain mixture of Polynesian in all. I think in San Cristoval, where my case of couvade occurred, the language shows more Polynesian than elsewhere, but that is all. I don't think that any observer who did not examine their language would take these to be more	Wangi (San Cristoval), Solomon's Group.	Personal property descends to sons, i.e., The child follows the father's kindred, 228.	"These appear upon the whole a remarkable tenacity throughout these islands of Melanesia towards the substitution of a man's own children for his sister's children, and others of his kin, in succession to his property; and this appears to begin where the property is the produce of the man's own industry with the assistance in most cases of his sons, as in gardens newly cleared from the forest in his money, his pigs, and his juncos. The original right of a man's sons is, and especially his sister's sons, to be his heirs, not only to the hereditary lands which have come down in the kin, but to personal property, if set already aside, even at Lepers' Island, where the advance towards the patriarchal system has been so considerable. It is probable that even in San something still survives of what must have been the original custom of the ancestors of that people, as well as of the rest of the Melanesians. It is evident that the <i>maua</i> forms
Banks' Islands	Saa (Malaita or Molayun). Solomon's Group.	Inheritance. In property becoming patrarchal, 63. (The child receives ceremonial visits from his	"There is careful as to what she eats before the birth of the child, but the father refrains from certain foods and actions both before and after the child is born i. father's movements affect the child, 228.
Japonesian than Indias. (Letter from Rev. R. H. Codrington.)	The inhabitants of Melanesia (the Submar Islands to New Caledonia) were originally a Papuan race with a considerable sprinkling of Polynesians. (Quadragesimo, Races Humanae, p. 361.)	Kinmen, which visits are taken to mean that his kinmen acknowledge the child to be of their blood, 230.)	The mother is careful as to what she eats before the birth of the child, but the father refrains from certain foods and actions both before and after the child is born i. father's movements affect the child, 228.
Arabs (Pentecost), New Hebrides.	The ancient succession of the sister's son to his uncle's property appears to be strongly maintained by. After the birth of the child the father has to buy off ceremonial attacks of his wife's kinmen, who seem to claim the child as theirs, 230.)	of succession depends upon the criteria of paternity; and it arises sometimes on this occasion of new ground, it may be thought to be strengthened by the formation of new agreements after the family has established itself within its kin," 68. In writing to me further on this subject, the Rev. R. H. Codrington says: "I should not say that the system in the Banks' Islands or the New Hebrides was patriarchal. Of course much depends what is meant by a patriarchal system, but surely I have said that the descent is counted through the mother in all the Japoneses in Melanesia and San Christoval. In those two places alone, that I know, descent of the family is counted through the father, not through the mother." Again I should say that all the Melanesians I know are matriarchal. With that exception, therefore, most of the practices I mention of the kind of couvade are followed by matriarchal people, i.e., people with whom the family is counted through the mother. Patriarchal, Matriarchal, Father-right, and Mother-right, are not satisfactory terms. There is no question of the rule of the mother or her rights over the child, among Melanesians."	The expectant father keeps away from the house and avoids sacred places after the birth; he works in helping mother and child, but must not eat shell-fish lest child get ulcers, 223-229.
Lepers' Island, New Hebrides.	The right of the sister's son barely recognised, 67.	Father very careful for ten days, does no heavy work for month; after the birth of any of his children he must not visit sacred places, 229.	Father very careful for ten days, does no work, climbs no trees, nor goes far into sea to gather, for if he exert himself the child suffers; if he so far from home the child's soul follows him, and he brings back a little stone representing the infant's soul, 229.

immunity from danger is, however, quite opposed in idea to the prevailing predominant idea in couvade, which consists in abstention on the part of the male parent from certain specified acts lest harm befall the offspring, expected or newly-born, and does not consist in the idea that otherwise dangerous deeds may be committed with impunity; when not pregnant the woman cannot step on the snake without risk, but when just past delivery she and her husband can do as they please in this matter. We also meet with a new notion that pregnancy or delivery reacts on the male parent, thus we have Mr. im Thurn's anecdote where some Indians refused to allow an Englishman, whose wife was known to be with child, to attempt to catch fish by means of the *haiari* narcotic, as, in consequence of his wife's state, the *haiari* would not act and the fish would escape (*Timehri I*, p. 313). An almost identical case is related by Mr. Kingston (*ibid.*, II, p. 355): "While some (True) Caribs were poisoning the Upper Pomeroon with *haiari* for fish, I saw one of them rub his shins with the beaten and washed-out *haiari*. Asking why he did this he told me his wife was with child, and that he could not therefore go into the water without first rubbing his legs with *haiari*, lest all the fish should sink to the bottom." Here the proposed action of the father does not affect the unborn child, but the unborn child affects the father by causing him to lose his fish, and precautions have therefore to be taken to prevent such a mishap. According to Bachofen this would mean the unborn child claims this man to be its father, which is absurd.

The table previously given of the variations in the practice of couvade shows us that in the larger number of cases the usually unconsidered daily actions of the father affect the welfare of the child that *is born*; secondly, that the father's acts affect the child that *is about to be born*; and finally, that the acts affect any child that *may be born at any future date*. The last-named stage of the custom or belief, namely, that acts committed before marriage may affect any future child, is easy of comprehension to us because it is logically correct, and we may therefore dismiss it without further consideration. But in the second stage we have the curious development of the belief into one which we may term an occult reaction of the expected child on the father, affecting his success in fishing, and also the still more curious idea that the mother of the expected child, if she eat of any of the animal food captured by the father's dog, will cause that dog to lose its hunting powers. A civilised reasoning man could hardly imagine such an illogical case as this last one.

In the majority of cases where the savage has given an explanation for his practice it implies his belief in a still existing

connecting, but nevertheless unseen, link between himself and the expected or new-born child. That he does really believe in the existence of some such bond is plain from the care he takes to avoid eating the specified foods which are said to injure the child, and it is plain from his careful abstention from the use of all sharp cutting implements, &c., with a like object in view. This kind of reasoning is known to us as magic or witchcraft, and it is nothing new to be told that one of the great characteristics of the uncultured mind is a belief in similar occult links, nor have we far to go to gather handfuls of examples. Here are a few:—

A particularly widespread belief is that one which enables an individual to bewitch another by means of articles once belonging to the individual who is to be injured. Thus, while Captain Speke was in Unyoro, the king, Kamrasi, sent some one to steal some grass from the thatch of a Chopi chief, "in order that he might spread a charm on the Chopi people, and gain such an influence over them that their spears could not prevail against the Wanyero" ("Journ. of Disc. Nile," Lond., 1863, p. 531). The Australian Aborigines believe that if an enemy get possession of anything that has belonged to them—even such things as bones of animals which they have eaten, broken weapons, feathers, portions of dress, pieces of skin, or refuse of any kind—he can employ it as a charm to produce illness in the person to whom they belonged (Jas. Dawson, "Australian Aborigines," 1883, p. 54). The Patagonian men have their hair brushed out every morning by their wives, sisters, or female friends, "who take care to burn any hair that may be brushed out, as they fully believe that spells may be worked by evil-intentioned persons who can obtain a piece of their hair or nails" (Lieut. Masters, "Journ. Anthropol. Inst." 1, 1872, p. 197). To this day the Sussex peasant believes that if a toad get hold of the long back hair of a maiden she will have a cold in her head for so long as it keeps the hair in its mouth. The Pakoos have certain stones with which they cause the death of an enemy by striking his footprint with them" (A. R. Colquhoun, "Amongst the Shans," Lond., 1885, p. 77). In Warwickshire they say "if you burn eggshells, the hens will cease to lay; and if you burn milk, the cows will run dry" (S. Timmins, "Hist. of Warwickshire," Lond., 1889, p. 213), where the burning of the eggshells or milk bewitches the hens or cows. Francis Moore recorded, one hundred and fifty years ago, the existence on the Gambia of a similar belief with regard to boiling milk ("Travels," Lond., 1738, p. 35), while only thirty years ago Captain Speke found the same belief on the Victoria Nyanza (*op. cit.*, p. 163). At Karague he informs us that "any one who ate the flesh of pigs, fish, or fowls, or the bean called

maharague, if he tasted the products of their cows, would destroy their cattle," and as a consequence he and Grant could obtain no milk (*op. cit.*, p. 205). This brings us to the belief that the eating of certain foods will affect the new-born or expected child (a characteristic accompanying belief of couvade) and which was met with by Dr. Livingstone ("Last Journals," London, 1874, II, p. 145), who recorded at Kasonge's village that if the flesh of a specified parrot is eaten by young men their children will have the waddling gait of the bird.

On one occasion Dr. Moffat found that medicine intended for a man was taken by his wife, under the idea that her drinking it would cure her husband ("Mission Labours," Lond., 1842, p. 591). Once at Goumbi, Du Chaillu brought into camp a live young female gorilla and he tells us "while she was alive no woman who was *enceinte*, nor the husband of such woman, dared approach her cage. They believe firmly that should the husband of a woman with child, or the woman herself, see a gorilla, even a dead one, she would give birth to a gorilla and not to a man child. This superstition I have noticed among other tribes too, and only in the case of the gorilla;" and elsewhere, on another occasion, when his party brought the body of a dead gorilla into the village, three women "who were pregnant hastened out at the other end *with their husbands* and nothing could induce them to return till the skin was dried and put away; they could not be convinced but that, if even the husband saw the beast, the wife would bear a young gorilla" ("Explor. and Adv. in Equat. Africa," Lond., 1863, pp. 262 and 305). This is similar to a belief, related by Mr. John G. Bourke, of the Moquis of Arizona, "who do not have the couvade, but in common with the Navajos and Zunis, are strongly imbued with the ideas of spiritual relationship between father and child . . . In Keam's store was a little iron figure representing a wrinkled old man smoking a lighted taper; at this figure persons using cigarettes, pipes, or cigars, were in the habit of getting a light without going to the trouble of striking a match. An old Navajo, *Ostin-Tzin-cle-he* (old man of the fire stick or match), who dropped in one morning, was offered a cigarette, which he accepted, but when invited to light it at the little statue lamp, declined very emphatically. Curious to learn his reason, Keam asked for an explanation. The old fellow said it would be 'bad medicine'; his wife was expecting to present him soon with an increase of family, and were he to light his cigarette at that figure his wife would be sure to have a son just like it. Keam laughed heartily at the, to him, absurd notion, but the old Navajo was not to be driven from his opinions by ridicule. He reiterated what he had said and appealed to several Indians

standing near—Navajos, with, I think, one or two Moquis—they all concurred in his prejudices ("Snake Dance of Moquis of Arizona," Lond., 1884, p. 236)."

If the Guiana father of the new-born babe eat of the flesh of the *agouti*, the child will be meagre like that animal, or if he partake of the *tabba* it will be spotted like the *tabba*—in other words, by eating of *agouti* or *tabba* the father bewitches the expected or new-born child, just like the Kasonge men who were not allowed to eat the flesh of certain parrots lest their children should have the waddling gait of the birds, or just as Speke and Grant's eating the flesh of pigs was said to be tantamount to their bewitching the Karague cattle.

Similarly the case of the father not being allowed to use any sharp cutting instrument or heavy tool finds its counterpart in the case of the Kamtschatka husband, as related by G. W. Steller. Saying that women suffer little in childbirth, he continues: "Zu meiner Zeit passirte, dass ein Weib zu einem raren Exempel ein Kind dergestalt gebahr, dass es mit dem Hintern zuerst kam, und drey Tage in Geburtschmerzen austehen musste, die Shamanie gab zur Ursache an dass der Frauen Mann schuld daran wäre, welcher zu der Zeit, da dass Kind in die Geburt trat, einen Schlitten machte, und die Querhölzlein über dem Knie krumm gebenget, wie man sie nöthig hat, woraus die lächerliche Phantasie der Itälmnen zu sehen" ("Beschreibung a. d. Lande Kamtschatka," Frankfurt, 1774, p. 351).

The curious case of the father's impossible success at fishing unless he use an antidote, where the father instead of bewitching is himself bewitched, is matched by the tale of the Siberian peasant and his gun, as related by Mr. H. Seeböhm ("Siberian Asia," Lond., 1882, p. 71). He had commissioned a peasant to shoot crows, "I asked him why he had neglected my orders. He told me it was unlucky to shoot a crow, that a gun which had once shot a crow would never shoot any other bird afterwards, and he assured me that he had once shot a crow and had been obliged to throw his gun away." Here the dead crow has bewitched the gun, the author of its death.

Schomburgk has told us that when the husband is doing his couvade, he is, amongst other restraints, not allowed to scratch himself with his own finger-nails. The man is, in fact, under a tabu like the Fijian or more like the New Caledonian (Hudson's Bay) women, who, under somewhat allied circumstances, must not "touch their heads with their hands, but keep a small stick wherewith to scratch them" (G. Hamilton, "Journ. Anthropol. Inst.", vii, 1878, p. 206).

If it be possible to trace such a custom, the evidence before us tends to show that originally the father, whatever may have

been the reason, abstained from certain foods, and restricted his daily vocations; then as these fasts and restrictions increased he was bound more or less to stay at home, and ultimately, as it was no hardship on the woman to be turned out soon after delivery, he took her place either, as Quandt and Chavallon suggest, to be out of the way of temptation to do the prohibited deeds, or simply as a matter of necessity almost, for he was bound to keep quiet, and therefore the hammock was the most suitable place for him to keep quiet in. Gradually, from taking the woman's place and being there visited and congratulated by his friends would spring the notion that he too was then and there at that particular period immediately physically concerned in the child-birth. In the meanwhile the fasting went on and other notions, such as the scratching with an *agouti* tooth, and the special duties imposed on him when he got up, grew up insensibly side by side in the same way as they die out together. With one exception above given, there is no thought on the part of the parents that the custom is practised to show that the father does it to acknowledge the child as his. It is said by anthropologists that originally this was the idea, but now it has been forgotten. Such an argument presupposes the idea, that the savage had instituted a ceremony in remembrance of an event, the event in this case being the transition from the matriarchal to the patriarchal. Now, in the first place, it is quite contrary to the genius of man in the savage state we are studying to institute such ceremonial, and, in the second place, the change has been so gradual as to be almost imperceptible—for, as has been well observed by Dr. Tylor, in these questions of evolution of man's ideas we are dealing with what are in point of time geological periods—and we may take it for granted that the savages themselves have no notion that they are in any state of transition at all. The Melanesians even in quite initial stages of couvade do not know that they are proving (?) the father's acknowledgment of his child.

To be a real case of record of the change, couvade ought not to be found among the matriarchal people, but it should be met with very largely, if not everywhere, among the matriarchal-patriarchal, and as a survival among the patriarchal. Its existence in the latter, however, is not essential to the proof.

At the outset we are met with its existence where it should not be found—namely, among the Arawaks, a purely matriarchal people and some Melanesians. It may be objected that the Arawaks have copied the custom from their closely allied neighbours, but we have no proof that such is the case, and we know for a fact that the Guiana tribes do not live in peace with one another, and are hence the less likely to copy one

another's customs. It is difficult to discover more cases of couvade among matriarchal peoples, because at the present day there are comparatively few existing tribes who can be considered purely matriarchal, and also because anthropologists may differ as to where the earlier state ends and the transition state begins. So that while the Rev. Dr. Codrington from personal knowledge considers the Melanesians as decidedly matriarchal (Table III) other anthropologists would see signs of a tendency to change.

We find most of the decided cases of couvade in the transition state, because magic, like other human institutions, has also had its development and also because we are perhaps more acquainted with savage life in this state than we are with it in the other two.

Accepting for a moment the statement that the existence of the custom in the transition state is a sign and record of such transition, then the converse should also be true, and its absence from the matriarchal-patriarchal should prove that this state is not one of transition but one of origin; but this leaves out of all consideration the Australian aborigines who at the present day while being exterminated are in the midst of their transition. While the Australians have much less scope for the exercise of their mental powers they are quite equal mentally to the natives of Guiana, and their medicine men are no whit behind the peiaman in their knowledge of magic. Hence we cannot regard the absence of couvade amongst the Australians as want of mental development, and we should consequently expect to find at all events some trace of its existence, even if only in an embryo stage, among a people who have advanced so far on matriarchal-patriarchal lines.

In the last known state, to us the patriarchal, we find few cases, because when mankind has arrived at that period of his development his general belief in magic has naturally by so much declined, and unconsciously he begins to give it the go by.

Where couvade is found in the transition state it has become to us a sign of the change, that is, we have found the custom and the change side by side, and come to the conclusion that the one is the sign of the other, but from the evidence brought forward in the above pages I am inclined to think such a conclusion untenable. If it be any record at all it may possibly be a record of the change from communal or from group marriage to individual marriage, but here too we may well hesitate.

Couvade, like all magic, may be considered one of the expressions of an aberrant form of reasoning, of every-day occurrence with savages, and the wideness of its distribution leads to the conclusion that, while other studies appear to prove that mankind's

mental progress is along one and the same highway, there is a natural consequent coincident identity of error in his development.

Appendix.

Though I myself fail to see any connection between couvade and certain phenomena which are occasionally met with in civilised life, yet it is perhaps just as well to record such as I have been able to gather. A "well-known Professor of Philosophy" writes to "Timehri" II, p. 160 :—"If ever you make out the couvade, I suspect you will find that its first origin was a real sympathy between husband and wife. I could tell you (if I had space) one or two very odd stories, where, during pregnancy, the husband, *at a distance*, was invariably affected by sickness—vomiting in one case. Such things are laughed at by the scientific, but if testimony goes for anything (and perhaps it does not), they are well established." The then editor of "Timehri" III, p. 149, speaking of this supposed real physico-sympathetic connection between a man and his wife extracts the following from the "Academy":—"In Mr. York Powell's interesting and able review of 'Grimm's Teutonic Mythology' ('Academy,' Feb. 23) reference is made to the universal belief among our English and Irish peasantry 'that a man will suffer from such ills as are wont to accompany pregnancy, nausea, neuralgia, and the like, if his wife be lucky enough to escape them.' Just to show that folk-lore is in many cases but a too free and illogical argument based on facts, I may perhaps be allowed to say that I am to-day acquainted with three persons, one living in Sussex, one in London, and one in Northants, who invariably suffer from neuralgia or vomiting when their wives are *enceinte*, the ladies themselves having a very happy time of it." In the "British Medical Journal" for 26 Sept., 1891, p. 725, Dr. Norris F. Davey reports a somewhat similar case thus:—"Many years ago a newly-married farmer and cowkeeper came to reside near Romford. The wife proved to have a distorted pelvis, and I delivered her of her first child by craniotomy. On six subsequent occasions I induced labour at seven and a half to eight months; on one of the latter of these pregnancies there was a doubt as to the date of conception, but the husband confidently confirmed the date of quickening because 'he felt so bad himself at that time.' He was very much hurt when I ridiculed such an idea, and said, 'You may laugh, doctor, but I always feel bad when that happens, without my wife saying anything about it; and why shouldn't I, as I am the father?' This civilised savage (who, I think, came from Wiltshire) was evidently a firm believer in the occult link, but it is

not an Essex belief, as I never met with any similar fancy during thirty-eight years' practice in that county."

Finally, the Rev. Dr. Codrington writes me: "I never could get any one in England to take it seriously, but I know the case of a man of purely European blood who had much constitutional disturbance in his wife's pregnancy. I know of another man of mixed blood who was always ill at his wife's confinements. If this happens only in some cases among natives, it would be quite enough, in my opinion, to make it the proper thing for a father to suffer something; and if one were to declare there was nothing the matter with him, or that it would make no matter to the child, he would be open to the remark that the child was not his." But it appears to me that such a deduction could only arise in the minds of those who see couvade already practised.

NOTE.

Since going to press I have seen the original wording of the custom described by Mr. D. F. A. Hervey on the Endau (Malay Peninsula), and which Wilken classes under couvade. It runs: "A curious superstition prevails among the Madek people, which, so long as children are unable to walk, prevents their parents from using as food certain fish and animals; as soon as the little ones have acquired the use of their legs this restriction is removed, and the parents are once more able to indulge in what has so long been *pantang*, or 'forbidden.' Should this superstition not be complied with, and any parent eat of any of the forbidden creatures during the period of restriction, the children are supposed to be liable to an illness called *busong*, arising, according to the Malay, from *prut kumbong*, or swollen stomach. . . ." ("Jour. Straits Branch Roy. Asiatic Soc.," No. 8, p. 120, 1882.)

DISCUSSION.

MR. BRABROOK said: Having had the opportunity of reading Mr. Ling Roth's excellent paper in MS., I am desirous of adding a few remarks. I confess I wish he had been able to treat the subject on the lines of our President's epoch-making paper on the methods of anthropological research, and I regret I have not had opportunity or materials to supply the defect; but I thankfully avail myself of the wealth of information which Mr. Ling Roth has collected. He very justly remarks that the custom seems to us an absurd one; but it is not altogether so when fairly considered; for what does it imply? 1. A condition of monogamy and conjugal fidelity. 2. The acknowledgment of hereditary succession through the father. 3. Domestic affection

and self-sacrifice for the sake of the child. 4. Highly artificial religious or superstitious belief. These are all indications of progress in civilisation, and in combination they negative the idea that the custom is a mere absurdity. Writers of high authority have suggested that the primitive condition of mankind was one of promiscuity, and that an early stage of development was that of reckoning kinship through the mother, on the cynical ground that that at least is certain; and though their conclusions have been challenged and met by arguments of some weight, I am not concerned to dispute them for the present purpose; for if they be accepted, at what a distance from primitive savagery does not the couvade place us?

The statement that the couvade implies a condition of monogamy and conjugal fidelity, though it seems to be obviously and necessarily true, requires some consideration in the light of the facts collected by Mr. Ling Roth. It must be admitted that some of the peoples mentioned in his paper have not the reputation of possessing these qualities. Passing over the European peoples in whom traces of the custom have been observed, the peoples of Borneo, China, New Britain, and Nicobar may be counted as monogamous. Among others of those he mentions polygamy is rare; among some it extends over a portion only of the community; in one case polygamy exists, but the couvade is used as a proof of paternity; and with regard to the Eskimo, whom it is impossible to claim as models of conjugal fidelity, it would seem to be doubtful whether the customs observed really amount to couvade. It is possible that couvade may have existed in some polygamous communities for the purpose of indicating the child of the favourite wife, who was to be adopted as heir; but if that be so, the custom itself would become the sign and symbol of a transition to monogamy, for it would raise the preferred mother to the position of sole wife and reduce the others to that of concubines. That couvade should exist in combination with actual polygamy, that is, that the man should be compelled to practise it on the birth of every child of a numerous body of wives, is so incredible that any evidence there may be of it must be open to grave doubt.

The second point, that the couvade implies the acknowledgment of hereditary succession through the father, is equally obvious. It implies it, not only as an admission of scientific belief, but as an actual fact in jurisprudence. The third, that it evinces domestic affection and self-sacrifice for the sake of the child, is confirmed by the circumstance that to this day the American tribes, among whom couvade has been most general, are marked by singular tenderness towards their children. The fourth point, its religious basis, I postpone for the present.

The problem then is, how reasonably to account for the adoption of a practice of apparent absurdity, among peoples possessing moral qualifications of this high character. Has that been solved by any of the explanations yet offered? I think not, and agree with Mr. Ling Roth that none of them is quite satisfactory. May

I venture to offer a suggestion as to a manner in which, as it appears to me, the custom may have arisen? I figure to myself a people among whom monogamy is an institution, and I am willing to think it possible that among the lower classes at least, conjugal fidelity may not have been strictly observed. Let me suppose a supreme ruler of this people, married to one wife and really attached to her, and possessed with the idea of securing to his offspring through her the succession to his authority. The time approaches for her delivery; partly from affection for her, partly from anxiety for the welfare of the expected child, he secludes himself in his dwelling, withdraws for the time from all affairs of state, and watches closely for a shorter or longer period over the infant. I assume him to be a man of such force of character that conduct like this on his part would seem to his people not an eccentricity to be laughed at, but rather an example to be followed. The subordinate chiefs would see in it something to mark them off from the common rank, and would adopt and follow it as a custom suitable to persons of aristocratic birth, who had something to leave to their children, and desired by this solemn withdrawal from other matters on such an occasion to mark the birth of an heir to an important position, and to testify to the purity of his blood. Once established as an aristocratic custom, it would soon become universal; for nothing spreads more widely than an observance supposed to be fashionable. In a short time the couvade would become an established institution among all classes. Once an established institution, the histrionic and farcical elements of going to bed, being dieted and physicked, would come in time to be added; and finally, the religious and superstitious theories to account for what had ceased to be explainable, its origin having been wholly forgotten, would have been developed. Where and at what time this may have happened, who can say? I should be inclined to place it somewhere in South America, where there has been ample space and time for many customs to grow up and take root, and be transplanted into Asia, and wander into many other parts of the world. All I plead for is, that when we meet with a problem of this kind we should try to solve it by the readiest means—put it to ourselves, What are the circumstances in which a man would naturally or instinctively act in such a way? avoid all hypotheses which imply sudden changes, and select those which involve only gradual and unconscious variations.

Have we any survivals of anything like the couvade among ourselves? I fancy not. It is true that custom requires the husband to fetch the doctor and the nurse, and that he endures snubs on all sides upon these interesting occasions; but my impression is that these date no earlier than the custom of employing man midwives, which is not I believe two hundred years old. The custom of the attendance of Ministers of State at the birth of a possible heir to the throne is one which has the same rational origin, and the same irrational persistence, as that of the couvade.

On the "MORONG," as POSSIBLY a RELIC of PRE-MARRIAGE COMMUNISM.

By S. E. PEAL

[WITH PLATES XIII-XIX.]

HAVING been for over twenty-six years a resident in Eastern Assam, and to some extent acquainted with the savage and semi-savage races in, and bordering, the valley, I have noticed among them many singular customs more or less peculiar to all.

The various clans or tribes, though varying a good deal in physique and language, as between the darker Nogus and paler Boro (Kachari), Garos, &c., are yet all of the one widely spread Indo-Mongoloid stock, which extends down the Malay peninsula, and to the east as far as the Anong, Kunung, or Lutze, bordering China.

The similarity or even identity of customs seen over this area, with many prevailing all over the Indo-Pacific region, and even New Guinea, are at times so remarkable as to arrest attention, one of the most noticeable being the institution of communal barracks for the young and unmarried (occasionally of both sexes).

Amongst the "Miris" of Assam these houses are called "Morongs," and as this term is pretty generally understood as applied to them here, I propose to retain it throughout this paper, when dealing with this subject.

On reading some books of travel lately, I find these houses are referred to; Dr. Warbung reporting "club houses for young men," as occurring in Formosa, where the hill savages are head hunters, and in so many other respects very closely resemble our Nogas. Mr. Joseph Thomson again also reports these communal kraals for the young and unmarried of both sexes, as seen among the Masai in Africa. C. M. Woodford reports them from the Solomon Islands; W. Powell also from New Britain; D'Albertis from New Guinea; St. John from Borneo. Many years ago they were reported amongst the Gonds and Konds of Central India by the Rev. S. Hislop. They are also common amongst the Sonthalis, Kols, and Oraons, by whom they are called "Damkuria."

In all the races exhibiting this peculiar social custom juvenile chastity is not valued, and we may say with truth that "morals begin with marriage."

But this custom being so often found associated with others

of a distinctly non-Aryan character, such as jūming, tattooing, blackening the teeth, building on piles, head hunting, &c., led me to suspect former racial affinity, even among such widely distinct types as Papuan and Mongol, Dravidian and Sawaiori.

On writing to Dr. E. B. Tylor, he forwarded to me a note by Sir H. Yule on this same subject, published in the "Journ. Anthropol. Inst." for February, 1880, wherein I see is suggested racial affinity between the so-called Malays and the Indo-Chinese groups, or even beyond, to include Dyaks and Papuans.

At the same time he gives a list of over a dozen peculiar customs common, more or less, amongst those races.

In the following paper I propose to confirm his remarks by a few words, and to extend the list of peculiar customs to others which he possibly was not aware of, and which also tend to demonstrate a community of descent among the races practising them.

Taking those referred to by Sir H. Yule, we have—

1. Blackening of the teeth artificially.
2. The disuse, or dislike, of cow's milk.
3. Distending the ear lobes by large plugs.
4. The prevalence of numeral affixes.
5. Head hunting, and the keeping of skull trophies.
6. Tattooing on the face, arms, or body.
7. The custom of platform burial.
8. Communal houses for many related families.
9. "Barracks" for the unmarried.
10. Pile-dwellings.
11. Double cylinder vertical bellows, &c.

1. The artificial blackening of the teeth has been well-known to me for over twenty-five years as a fashion common amongst Indo-Mongoloids, and Bengalis. It is considered a sign that they chew plenty of "Tamol pan," i.e., areca nut, lime, pepper leaf, tobacco, etc., which naturally blackens the teeth of those who chew it habitually. A powder is sold in the bazaars which blackens them artificially, and which is composed of Terminalia Citrina seed and sulphate of iron. Buds of the Talauma Hodgsonii and iron scrapings, I am told, were formerly used by Assamese girls, and there can, I think, be little doubt that the custom in some way preserves the teeth from decay.

2. The dislike of milk among the races bordering Assam, is very general, possibly almost universal. In most cases milk is viewed with actual repugnance as an article of food, but its value is becoming of late years so rapidly and widely known through the bazaars that it is likely the prejudice will die out.

When among the Eastern Nogas of the Tirap and Namtsik valleys in 1870-1, I observed that their cattle were much superior to those of the plains, but they were used solely for their flesh, and I fell considerably in their estimation when they discovered that I drank milk.

3. The extension of the ear lobes by large plugs of various sorts is so general, and so well-known as a custom of all these races, that it is perhaps needless for me to say much about it. The Miri belles have the largest ear-plugs of any tribe in or about Assam; they are made of silver, and not unlike napkin rings, two to two-and-a-half inches in diameter by one inch in depth, the outside being closed by a large chased disc. The extended lobe passes round the ring in a wide shallow groove, like a band of vulcanized rubber.

4. Numeral affixes are seen here as among the Malays, and would no doubt prove an interesting study to philologists. The best example known to me is that of the numerals, among the Banpara, Joboka, Sanglo, Muton clans to the east of the Sibsagar district, near Oboepur, Mouza.

Thus, 1—*Eta*.

- 2— *a. ni.*
- 3— *a. jum.*
- 4— *a. li.*
- 5— *a. ga.*
- 6— *a. ruk.*
- 7— *a. nut.*
- 8— *a. chut.*
- 9— *a. ku.*
- 10— *a. bun.*

half-an-hour while an old chief gave the names and counted over the fifteen men lost by his tribe in a head-hunting raid. Slowly he doubled down one finger for each name, first on one hand and then, keeping that fist closed, doubled down the fingers of the other. Then he began on his toes and when at about twelve or thirteen found he had unwittingly opened his fingers of the right hand and, despite my protestations, started all afresh persisting that the whole count was spoilt and that having opened his hand I should *never* be able to understand it unless repeated. The old fellow was smart enough in many ways, but he had *four* "shots at it" before he got safely to the fifteen.

5. Head-hunting seems to be slowly dying out amongst our most eastern Nogas, who have long been more or less under (our) Siaphus. In the extreme east at Soukap, and indeed as far west as Makum, the villages are often small (eight or nine houses) and not in any way fortified.

Herein the terminal "*a*" of 1 in *Eta* survives as the affix in all the others, as *et-* "*a. ni.*" *et-* "*a. jum.*" *et-* "*a. li.*" and so on, as we should say in English, a one, a two, a three, &c., "*a*" is pronounced as in bun, except 9, "*a. ku.*" which is koo.

All these tribes count to ten only and then repeat; at times they keep tally on the fingers to ten, and on the toes after.

I once had to sit patiently for over

The tribes near the plains, again, to the west of Dikhu river, seem to be giving it up, but those intervening—say from the Dikhu eastwards to Namsang—are all still inveterate "head-hunters," and for centuries have been notorious as a truculent and turbulent group. I have known of a good many horrible cases of Noga "heads" being taken close to the plains; one where the "Khulumias" tied up a captured girl, while the chief, singing his war song, and before the assembled braves, danced round and slowly hacked her to pieces, and this, too, well within sight of several tea factories, and within range of one steam whistle. Among most Noga tribes the young men cannot be tattooed until they have got or actively assisted in getting a head, hands, or feet of some Noga not of their own or of a friendly tribe—man, woman, or child, it does not matter.

The heads so taken either during a raid or by isolated surprises are exposed on bamboo poles near the village "Head" Morong; feasting and dances follow. Eventually, after the skull has become quite clean, it is removed and added to the collection in the "Morong." In one of these houses I have counted over three hundred.

6. The tattooing above referred to is, I find, often performed by old women of the chief's household, and as a matter of right. In some tribes, the "ak," or pattern, is on the face, and varies among different tribes; in other groups it is on the body, and in some way is a record of the number killed.

The punctures are made by a small bundle of thorns, and some gunpowder is rubbed in. If on the face, the swelling is so great as to blind the man, and he has to be led about and fed for some time.

Tattooing is taken to be a sign of manhood, and until he is so decorated a young fellow is often asked by the girls why he does not wear a woman's cloth.

7. Platform burial is general amongst Nogas of E. Assam in some form or other, for men and adult women (Fig. 1). After death, the "Deories," or special men, swathe the corpse in mats, and, extended full length, it is placed on a raised and roofed platform close outside the village. The arms and all implements are tied on, and are strictly tabu; they stick little flags on here and there, and, when complete, it is a "Ruk tua." I see that this custom of "platform burial" prevails under some form or other in Formosa, New Guinea, Borneo, Solomon Islands, Aru Islands, New Britain, and amongst Lushais. In many instances, as here also, the skull is eventually removed, and preserved in a special house, or secretly buried.

Naturally enough all burial customs are closely adhered to among savage and superstitious races, or at least change last,

and then probably slowly, so that this feature is an indication of racial affinity in those practising it, or, at any rate, a link in the chain.

8. Communal houses of great length, 100 to 200 ft., are common among some races in and around Assam, as Miris, Singphus, &c. The peculiarity is carried to such an extreme in Borneo, that Dyak houses have been seen over 500 ft. in length, by Cameron and others. So far, I am not aware of the cause for such extreme length, unless it be, to so concentrate the men, as to give greater safety against surprises by head-hunters.

Among many Noga tribes, whose villages are often perched on easily defended peaks, the entire site is defended, and hence there is less need for concentration in one house than in those villages in which the site is not so easily fortified.

9. Barracks for the unmarried young men, and occasionally also for girls, are common in and around Assam, among non-Aryan races. The institution is here seen in various stages of decline or transition. In the case of "head-hunters" the young men's barracks are invariably *guard houses*, at the entrances to the village, and those on guard day and night keep tally of the men who leave and return. Among Nogas these barracks are called Pah to the east of Dikhu, and Arizu to the west. The Abors, according to Needham, call them Mosup. Miris, as before stated, call them Morongs. Mikirs call them Tareng. Lushais again call them Zalbuk. They are also guest and council houses, and contain skull trophies and the large war drums.

In all cases there seem to be old and peculiar laws and privileges attaching to them, and in many instances they issue orders to the village (see Needham, R.G.S., 1886, p. 319, Lewin's "Wild Races of Eastern Bengal," pp. 119, 121, 182). Among Mikirs anything happening of moment is first reported to the "Cleng Sarpo," or elected head of the Tareng, and by him communicated to the villagers. At times a Noga village has eight or ten "Pah" for young men, and four or five for girls, the latter supervised by some old woman, all these houses being *strictly tabu to married women*. From childhood to marriage there is also the most complete and *recognised* sexual liberty; morals in fact, as before stated, begin with *marriage*, infidelity afterwards being, I believe, exceedingly rare. I do not think that this state of affairs is sufficiently well known either in England or India. It is known to a few "experts," so to speak (see Lewin's work), but not to the general public, or even to all those who may have to legislate for these savage and other races on sexual matters.

But this early promiscuous intercourse does not appear, as far as I can see, to affect these races prejudicially, many having a

fine physique, and contrasting as a rule favourably with the Aryan races—of the plains especially.

Another noteworthy fact seems to be that children are very seldom born until after marriage. If two or three per cent. of the grown girls become *enceinte*, their marriage is arranged for, generally to some favourite swain, and all parties are as a rule satisfied. Thus this widely spread and peculiar institution, which I call the "Morong," is of special interest, from both a social and an anthropological point of view. It extends in a more or less modified form over an enormous geographical area, and among many races.

The following abbreviated references may here be given in regard to this matter :—

Rev. S. Hislop. The Gonds and Konds have "bothies" for young bachelors, "Gotal ghars" for unmarried young men and girls, also among the Juangs.

Mr. Pethrick. The Oraons, Kols, and Sonthals have barracks for the unmarried young men and girls, called by Oraons "Damkuria."

Holrong (New Guinea), speaks of them also: "The young men live in houses distinguished by a man's figure."

C. Trotter (New Guinea). Large houses for bachelors.

D'Albertis (New Guinea). Young men's houses at end of a street.

D'Albertis. Corpse taken to the house of the unmarried young men.

W. G. Lawes (New Guinea). Sacred houses tabu to women, at the end of a street.

Capt. Bridge (New Hebrides). The young men sleep in large club houses, "Rupas," specially set apart for them, and tabu to their own married women.

St. John (Borneo). Head-houses and bachelors' houses.

W. Powell (New Britain). "A young man's sleeping house."

C. M. Woodford (Solomon Islands). "A large house with bunks along the sides, shared with men and boys."

Dr. Warbung (Formosa). Club houses for young men.

Joseph Thomson, "Masai," Africa. Distinct kraal for all the unmarried young men and girls.

No doubt the above are but a few out of the published references to the "Morongs" in other countries, probably less than ten per cent., and I would here mention that in many cases travellers, though often actually sleeping in these houses, have quite failed to see the meaning of them, and not being sought for, they are often only quite casually referred to.

10. Pile dwellings again are referred to by Sir H. Yule (Figs.

3 and 4). They are a leading feature among most of the hill races about Assam and even in the plains, as among Miris, Singphus, Kamtis, &c. This custom, in conjunction with the many others referred to above, extends all down the peninsula, and throughout the archipelago to the Solomon Islands in the south, and Formosa in the north. It is a conspicuous link when viewed as above, in limiting racially the many groups now looked on as distinct, such as Indo-Mongoloids and Papuans.

Taken by itself, the custom, though an extraordinary coincidence among contiguous races, could hardly be appealed to as proof of racial affinity, but when viewed, as Sir H. Yule points out, in conjunction with at least a dozen other singular customs, the cumulative evidence becomes almost irresistible, and cannot be ignored.

But even taking this one feature of "pile dwellings" alone, we find it contains a large amount of internal evidence supporting the former unity of these races. Not only is the raised floor seen from the borders of Thibet on the north, to the Solomon Islands in the south, but the singular extension of the floor beyond the end of the house is carried more or less all over this area. I referred to this projecting platform in my note in "*Journ. Anthropol. Inst.*" vol. xi, Plates II and III, 1881, where it is illustrated. This projecting portion of the floor is of a functional nature. It is used to sit out on, men and women work on it, making mats, or pottery, weaving, &c., and it is the place whereon they dry sliced yams, fish, and flesh. Nuts, fruit, rice, &c., are exposed on it safe from the ever-prowling pigs.

A Noga has pointed out the absolute necessity of this platform as a safe place for infants left in charge of little children while their parents are away in the jùms.

The pattern of these pile dwellings no doubt varies greatly, but there is a unity in the general plan, which cannot be accidental.

11. Lastly, I may refer to the peculiar double-cylinder (vertical) bellows (Fig. 2) mentioned by Sir H. Yule as common in Arakan, Burma, Sumatra, Java, Madagascar, and the Philippines, and which Col. Godwin-Austen has pointed out as seen in the Kasia and W. Noga hills. It is common in and around Eastern Assam, and among Kamtis and Singphus, and in the "*Journal, A. S. Bengal,*" vol. iii, Part ii, 1883, p. 14, I described it as used by the Anoang-Kunungs, or Lutze on the Salwin.

Sir H. Yule has so ably commented upon the value of the above cumulative evidence, from 1 to 11, as indicating racial affinity that I need not dilate upon it, but will now confine

myself to strengthening his argument by other evidence, a good deal of which may have been unknown to him.

12. Bamboos pegged to a tall tree stem as a ladder are quite common here, in and around Assam (Fig. 5). Wallace, in his "Malay Archipelago," carefully describes one he saw made by Dyaks in Borneo of identical nature, but here there seems to be an improvement, inasmuch as the pegs driven in for rungs at every 18 or 20 inches, point alternately left and right, so that viewed from above they cross like an X. This not only prevents the bamboo leaning in and touching the tree stem, but when dry and shrunk it cannot fall away and needs no tyings.

I have seen Nogas make these ladders very quickly, and ascend very tall trees for honey, and they last good for over a year.

13. The "jew's harp" of New Britain (Fig. 6) illustrated in Powell's "Wanderings in a Wild Country," p. 72, and seen also in the Philippines, is very common in these hills. Held by the left hand, the string is jerked by the right, and the gum-loaded tongue vibrates, producing a fairly loud tone. In the hands of an expert dandy it is reputed to be quite irresistible.

14. The perineal bandage (Fig. 7) of New Guinea (R. H. Thomson) is also common here amongst our Eastern Nogas of the Timp and Namtsik valleys. Begun in childhood, the testes are kept in by a strong bandage 4 or $4\frac{1}{2}$ feet long by 3 inches wide, which is passed under the cane belt behind and brought forward between the legs; it is then passed under the belt in front and tightened up, and the ends are left hanging down.

Often, when even a little below a row of boys and men at 10 or 12 feet distance, I have noticed that as far as outward appearance went, it would have been quite impossible to say if they were males or females, a remark invariably made by Europeans when first seeing these people.

15. Nose-plugs again, as in New Guinea, are seen among the women of the above tribes, and take the form of studs passed through the cartilage of the septum (Fig. 8). The discs are about the size of a shilling, and of metal.

16. Flat wooden discs (Fig. 9) on the posts of houses, to keep out rats and mice, absolutely identical with those seen in New Britain, are also very common among some Nogas and Singphus, especially on the barns.

17. The hide cuirasses (Figs. 10, 11) seen in the island of Nias, west of Sumatra, and cut from a single skin, are again an almost exact counterpart of those occasionally seen here among Nogas, and are both spear and arrow proof. When we bear in mind the enormous distance which separates the island

of Nias from Assam, the identity of these singular cuirasses, used in each case by savages, can hardly be the result of accident.

18. Panjis or bamboo spikes, planted for defence in pathways are here common among all our hill tribes, precisely as among the inhabitants of New Guinea. The custom indeed is so general amongst all the savages of the archipelago, and so well known, that it is only necessary to notice it as another link in the long chain of evidence which tends to prove that the Papuan and Mongoloid are descended from a common stock.

19. Hot stone cooking again is common here, as among the Papuans and other races.

20. The custom of obtaining fire (Fig. 14) by means of a long piece of cane passed under a dry log and pulled alternately by the right and left hand, so as to ignite some tinder placed in a hollow or split underneath, is absolutely identical amongst Nogas, Papuans, and Dysks of Borneo.

21. The huge canoe war drums are again a remarkable feature in this argument. As far as I can make out, those seen in these hills are the same as the "Lalir," or canoe drums (Fig. 15) of the Fiji Islands, and both are placed in semi-sacred houses, the Noga drums being in the "Morongs." The notable feature in these last being that they are veritable canoes, 20 to 30 feet long by $2\frac{1}{2}$ or 3 feet beam, hollowed out of a tree stem, and in use by races who never entered, and in most cases have never even seen, canoes for ages.

The extremities of these war drums are carved into "crocodiles' heads," while at the same time it should be noted that there are no crocodiles in these hills, but that the crocodile is constantly seen as a decoration amongst Papuans and Sawaiori.

Either the crocodile or its head as a decoration meets the eye all over the archipelago and throughout the Pacific, and the singular feature in the case is that we have this decoration here in the hills, where the crocodile *does not exist*. But a still more extraordinary case is presented to us when we recollect that among the Pacific races and in the archipelago, the semi-sacred canoe-houses contain the skull trophies; there are there also, as here, "skull houses," and also here, as in the Pacific, these houses are *tabu to women*.

Taken all through, therefore, these large canoe war drums of our Nogas seem to be worthy of careful study, as possibly yielding a clue to the origin of these races, another link in the chain.

22. Cane bridges identical with those seen in New Guinea are seen literally everywhere round Assam.

23. Lastly, the system of jum cultivation is pursued in and around Assam by most of the non-Aryan races, in much the same way as amongst the wilder races of the Indo-Pacific region. It is practically identical over a vast area, but whether it can be considered, as a whole, of value in aiding to trace relationships is perhaps doubtful. Singular customs or peculiar implements employed in juming would seem to be a safer guide, and until the various systems of juming are more carefully studied and collated, it may be premature to rely on this as an argument for identity of race.

Juming so far is not fully understood in India. The Government has in vain for many years endeavoured to curb or check what it calls "this wasteful and vagrant system," not being aware of the causes which underlie the custom and render it, in most cases, absolutely necessary; the various enactments or orders practically fail to influence it.

24. In the "Journal of the Asiatic Society of Bengal," part i., No. 1 of 1872, Plate V, I illustrated the way in which Nogas and other hill men notch footholds to ascend a tall tree, grasping the stem round by both arms as they rise, and holding the stem by the left arm while with the right they notch two other footholds (left and right) above, retaining the dau handle in the belt behind when they take each step. I have just found that in "Malibus" (ed. 1890), p. 16, this method of ascending trees is common in Australia among races using stone axes; the method is *absolutely identical* therefore in Australia and Assam.

Having comparatively lately taken up this inquiry and comparison of the customs seen among races in Assam and those of the archipelago, I do not for a moment suppose that the list is at all complete. There are probably many more and equally remarkable instances of identity over the two regions, which will be found on further investigation, but probably enough has been said to establish a *prima facie* case in favour of a common racial descent.

Hitherto, there seems to have been some little difficulty in getting at the correlation of the various Indo-Pacific races, Dravidian, Mongoloid, Malay, Papuan, Sawayori, and Sub-African, but perhaps where the study of the languages and physique fails these many singular and persistently associated customs may help us. The peculiar and widely-spread institution of the "Morong," more especially, may aid us in solving their racial affinities, at the same time affording an unexpected clue to the earlier stages of social development.

From its very nature, the "Morong" can hardly have arisen independently among all the above-mentioned races. The disregard of "juvenile chastity," which now-a-days we look upon

with absolute horror, was in them not only allowed, but actually organised, and on a barrack system. And these communal houses had, as a rule, other peculiar functions added to them ; they were "Skull houses," council halls, guest houses, often contained the trophies of feasts, the war drums, and, most significant and universal of all, were tabu to *married* women.

More or less the "Morongs" of various kinds epitomise the racial customs and traditions, and also the social conditions of the past. They seem to concentrate the past to a focus in the present which we can leisurely examine, and a conspicuous feature is the general and marked antipathy to the "married woman," as an innovation ; the tabu of the "Morong" is directed *against* her.

Whether captured or not she is the slave, and not the mistress of the situation. In fact she is universally treated as an *intruder*. But as we might expect, there is almost infinite variation in the details regarding these semi-religious, semi-communal houses, and the institution is seen in several stages of decay. Races were probably in the past even less homogeneous than at present. What we see now, I take it, is not a series of mixtures of "pure races." The pure Aryan and pure Papuan stand on the same pedestal, as the pure Cafuso, and half-caste. So that we may well be prepared for different local peculiarities in this survival. Races were always crossing more or less, and thus they never could be pure.

As far as I can see, the "Morong" indicates the wandering "horde," settling down, and becoming less savage and nomadic, the relic of the former stage of pre-marriage communism, and infinitely varied locally. It would point to a time when Dravidian, Mongol, Papuan, Malay, were not in existence, at least as we now know them, when there was a common, variegated, and probably nomadic stock, most of the varieties of which have probably died out long ago, leaving the "fittest" to develop, when more settled, later on, into the *races* we now see.

In some tribes it exists in a highly developed form, retaining considerable influence, accompanied by both exogamy and endogamy, the three phases of sexual relationship running side by side, probably a unique phenomenon.

The chiefs of most of the tribes east and south of Sibsagar District, who are great sticklers for custom, still marry their "Kuris," or true wives, from other tribes ; they cannot marry in their own, and those of their own tribe with whom they live are "Karsais," or concubines, the children of whom cannot become chiefs.

The chief's marriage ceremony includes a mimic fight and mock capture of the bride, as she is *en route* to her new home.

But the common folk, though still inveterate "head hunters," are so far settled, and *comparatively* densely packed in the hills, that exogamy has become impossible, and they now all marry within the tribe. Meanwhile the boys and girls, the unmarried young men and young women, hold to their old and time-honoured "Morongs," and amongst them, though at times located in distinct houses, there is complete and *recognised* sexual liberty.

When opportunity and inclination offer, they pair off and settle down, going through some public marriage ceremony. Thus the individuals epitomise their own race history. The "marriage" comes as a restriction on complete sexual liberty.

Naturally enough, I have been endeavouring to discover the pre-Morong stage, for the "Morong" being a *house* built among settled savages, the customs from which it took its origin would be seen best among semi-nomadic races, as in Australia, or among wandering forest tribes. So far, my only clue has been found amongst the "Masai," near Lake Nyassa, in Africa.

Mr. Joseph Thomson says of them, in the "Journal of the Royal Geograph. Society," 1884, p. 701:—"The boys and girls up to a certain age live with their parents . . . At the age of twelve the girls, and from twelve to fourteen the boys, are sent from the married men's kraal, to one in which there are only young unmarried men and women. They live there in a very indescribable manner till they are married."

Later on he describes how the young Masai warriors lie all day long in groups around the outskirts of the camps, to guard them and the grazing cattle from surprises. This grouping of the young warriors around the camps to protect them is therefore what we see repeated among our Nogas, in the "guard houses," at the only accessible entrances to their villages; but among the semi-nomadic Masai, on extensive plains, these guards are not housed as here; they need to be more moveable.

No doubt other instances of a similar, or modified nature, may be found among nomadic races, perhaps among the Australians.

The paucity of references to the "Morong" or barracks for single young men, or girls, in many standard works relating to the Indo-Pacific region, is most extraordinary.

I do not think they are referred to by Wallace at all in his "Malay Archipelago," although at times he evidently slept in them, especially when he was living among the Dyaks.

D'Albertis, I believe, mentions them as barracks only twice, in the two volumes, and then refers to them accidentally. A headless corpse was "taken to the house of the young unmarried men," and in the second volume the "young men's

houses" being at the ends of the street, or words to that effect, but he several times refers to the women living in houses apart from the men, as though the sexes were divided, married or unmarried, or as if "marriage" had not arisen as yet in that tribe.

This extraordinary silence on such a peculiar subject must, I think, be due to inadvertence, and to the fact that the whole case has not been referred to more pointedly by anthropologists. The subject is known but in a more or less disjointed manner, and hence has not attracted the attention which it deserves.

No doubt the institution of the "Morong" has been developed along several lines, and what we now see everywhere are but isolated fragments, many of its forms having no doubt died out. Its growth may indeed never be traced clearly all along, but D'Albertis seems to have given in two illustrations a good instance of transition, in one form, in New Guinea.

At vol. ii, p. 140, in Para's village, we see the large "Morong" 300 ft. long by 36 to 45 ft. wide, the "communal house" (Fig. 17), and along each side a series of detached huts for the *married* people, having the doors and ladders to each distinct, but a plank bridge joining them to the large public hall, "Dupee," or "Mared," in case of a night attack.

In the other illustration (Fig. 18) the married quarters are still further detached and form a street, the "Mared," or bachelors' barrack, and public hall being between and at the end.

The existence of semi-detached huts for the married folk is very interesting as evidence of the subordinate position of the married, compared to the unmarried; and not unlike the Dyak houses, wherein the married people are partitioned off, along the side of the communal houses. But from what I know already of the effects of isolation among tribes (and the notable way in which it influences even physique), I should say that future investigation locally, all over the Indo-Pacific region, would not be likely to yield identical results. The "Morong" has not only begun with many local variations, but it has developed along many crossing or divergent lines.

It will take years of patient local inquiry, aided by frequent summaries on the whole case, before a net result can be arrived at. In tracing the matter back we can never, I think, expect to see the evidence complete; there must be many missing links in the several chains, and as time goes on, and the savages are brought more and more into contact with civilisation, others will drop out, so that the sooner the inquiry is pushed forward the better. Among Kacharis here, the "Morong" is now a tradition. Viewed as an aid to the study of human development, it should be of some use. The pre-historic man in some respects survives

perhaps more tangibly in customs like this, than even in language or races, and though the glimpse we get of him, by this view, may not be particularly flattering to us, it is more or less what we must expect, if the doctrine of evolution is true.

In other instances we find that both custom and physique appear to change more rapidly than language. Most people in Assam would probably at once say that the comparatively pale Boro, or Kachari, who are still pagans, and who sleep in little huts, on the ground, are a very distinct race from the darker, pile-building, head-hunting Nogas; yet we find their numerals, and many words and names, reveal a very close relationship, thus (adding Garo and Kunung) :—

	Kachari.	Garo.	Kunung.	Bansara Noga.
1	se	sa	ti	eta.
2	ne	gni	ani	a ni.
3	tham	gi tham	a sam	a jum.
4	bri	bri	vli and bri	a li.
5	ba	banga	panga	a ga.
6	da	dak	kru	a rak.
7	sni	sni	syen	a nut.
8	sat	chet	syet	a chut.
9	skho.. ..	skhu	gu	a ku.
10	zi	chi and chi kung	ti san	a ban.

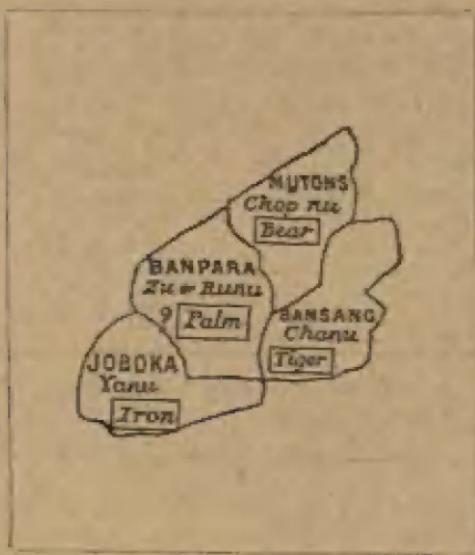
Again, we have many names in common use almost identical in Kachari and Noga, thus :—

English.	Kachari.	Noga.
Bird	daw	nw.
Eye	mi	mik.
Water	doi and di	ti.
Hill	ha zu	ha.
Tree	bang	pun.
Eat	za	sa.
Dog	stri	hi.
Cow	ma chu	mai hu.
Fish	na	nya.
Son	fi sa	sp.
Path	lams	lam.
Egg	daw di	aw ti.

and the resemblance is often more than superficial, as we can see in the word "egg," which in both languages is literally "*Fowl's water*." But while there seems to be ample evidence from language that our Nogas are racially allied on the north to

the Boro, or Kachari, which at one time extended from Sadi to Tipperra, on the other hand we have the clearest possible proofs that as regard customs our Nogas are almost pure Dyaks. In Juming, Pile-building, Tattooing, Head-hunting, Morongs, and many other features, these widely separated races are really identical and not merely similar.

What we may call the leading racial customs are the same. But inasmuch as our Kacharis and Nogas are both really good samples of the Indo-Mongoloids, which extend from Eastern Bengal to China, and from Thibet to Mergui, all these races or sub-varieties must have been, at one time, closely allied to the races in Borneo, i.e., they must have descended from the same stock.



[Assamese names for tribes are printed in Roman type, Noga names in Italics.—S. E. P.]

How far the cumulative evidence derived from custom may serve as a trustworthy guide in tracing past relationship among *all* the Indo-Pacific races, it is not for me to say. At the most, I might suggest that many of the physical peculiarities, now relied on as evidence of distinct race, may turn out to be due to inter-crossing of strongly marked varieties. The Papuan's mop of hair, may like the Cafuso's, as Wallace suggested, be due to the crossing of the Indo-Mongoleid straight hair with the Negro's dense little curls. If this were so, it might perhaps relieve us from the necessity of looking on the "Papuan" as a *distinct* race. It would be a proof of mixture and not of purity, and

influence our views with regard to so-called "pure races" generally.

But beyond all this, and granting that the present so-called Dravidian, Mongol, Negro, Papuan, Polynesian, &c., are the net result of divergences and crossings among the varieties of a former stock, the question arises as to how some of the many customs seen among all, such as the "Morong," can have been so generally disseminated among these widely scattered groups.

This feature of the case may possibly, however, present less difficulty as time goes on, and as the evidences of former relationship become more clearly defined to anthropologists.

The present note is mainly intended to draw attention to the many singular customs which are held in common by races now looked upon as more or less distinct, and which seem to indicate that these races must have been derived from a common source.

P.S.—The chiefs of the tribes below are exogamous; they cannot marry in their own tribe. The totem seems to come in here, i.e., a "Bear" can marry an "Iron," but not a "Bear"; a "Palm" can marry a "Tiger" and so on.

APPENDIX.

Morongs in the Noga village of Banpara = ZU.

I have just persuaded a trustworthy Noga, named Tolong, from Banpara, whom I have known over 20 years, to give me the list of his Morongs, &c. Banpara is the head village of that clan, and rather large. It is divided by a Khud into two portions (1) the Bor gaon and (2) the Horn gaon (Assamese names). The largest Morongs (A) have from 50 to 60 grown men attached to them, while the others (B) have 40 to 45 men. Every group of 30 or 40 houses has its own Morong, as a sort of parish courthouse, &c.

<i>Bor Gaon.</i>	<i>Ra man Pah</i>	A.	<i>Horn Gaon.</i>	<i>Kho Nu Pah</i>	A.
	<i>Pa Ke</i>	B.		<i>Nok Si</i>	B.
	<i>Vong Tong</i>	A.		<i>Nai Tong</i>	A.
	<i>Ra Nok</i>	B.		<i>O Hm</i>	A.
	<i>Ten Tok</i>	B.		<i>Pah Nu</i>	B.
	<i>Lo Tong</i>	A.		<i>Pah Sa</i>	B.
				<i>Vang Hmum Puh</i>	B.

In this tribe there are no Morongs for girls (now); they sleep at home, with the exception of one from each large family, who has to do service in the chief's house, or his jum. But all, till they marry, have perfect sexual liberty. The young men have

their meals at home, and take it in turn to mount guard in their Morongs, where from 6 to 10 are stationed day and night; in time of war 20 or 30 men are constantly on guard, as ambush parties have to lie near the paths leading up towards the "chang" or village (at night), to prevent it being rushed.

If there are 3 or 4 sons in a family, one of them has to stay near the chief's house, and do his work, or in the jums.

In long-continued feuds, the duty of guarding is irksome. The Joboki-Banpara feud has existed now for seven years, and involves, generally, the minor villages, though not always.

Adjacent tribes have Morongs for single girls, as the Jobokas, and Namsangias, but the custom seems to be on the wane.

The number of "Morongs" for men alone, among these hills, must be enormous.

Measured in several places on the Government maps I find that on an area of 40 miles long by 16 wide, say 640 square miles, there are about 64 villages, or 1 village to every 10 square miles, and, allowing an average of only 5 Morongs to each village, this gives 320 Morongs on 640 square miles, say 1 Morong for every 2 square miles.

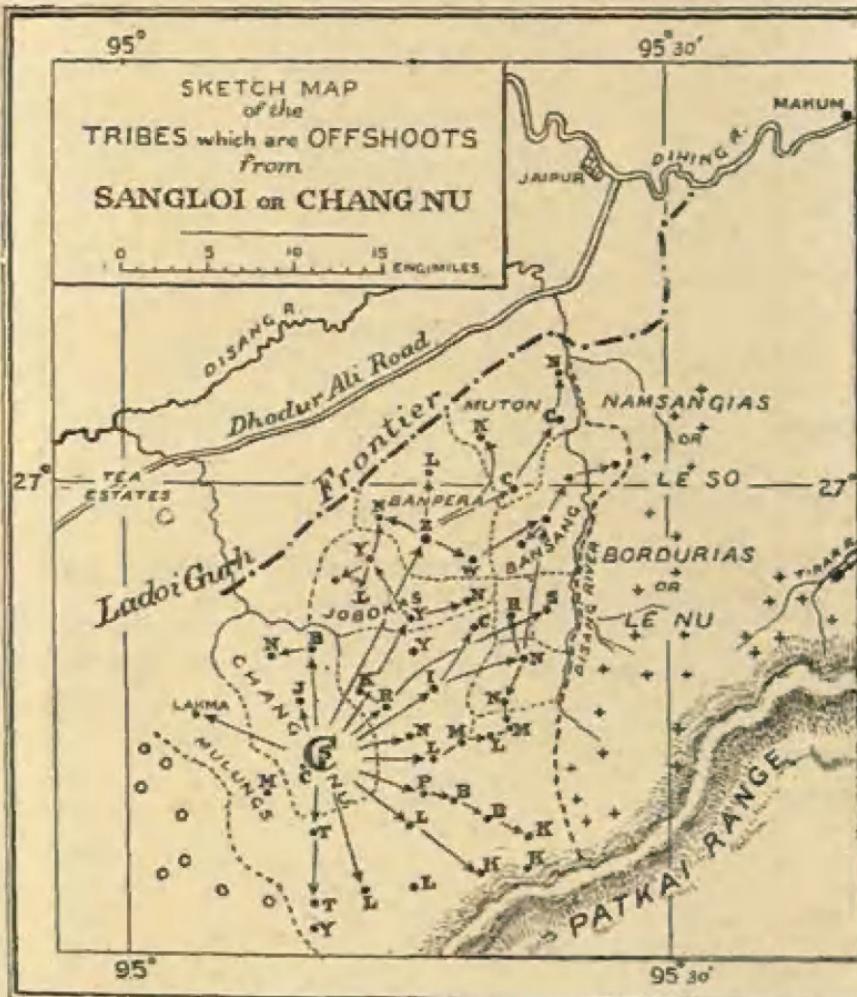
Population is fully up to the present food capabilities.

The deaths due to head-hunting are a small percentage only, about 45 to 50 per square mile is probably not far out. But there is very great irregularity in most things in these hills, except in matters such as pile-dwellings, tattooing, jüning, and the like. Lesser customs vary quite as much as the languages, which are mutually unintelligible, at distances of 20 to 30 miles. For instance, I have been in a Singpho village, Jagon or Dihing, where there was one girls' Morong, and none for the young men. (See "Journ. Asc. Soc. Bengal," vol. lii, part ii, 1883, pp. 16 and 17.)

Jüning.

Among most of the races round Assam the system of jum cultivation is pursued. Each year the hill slopes are cleared in a certain rotation, and on these sites every man's plot is carefully marked off, and in case of death, if there are no children, it lies fallow, as in A and B (Fig. 19), until the tribe gives it to some one else. The first season root crops are grown, cotton, chillies, yams, &c., the trees are lopped and some are felled. At a distance, first and second year jums can be recognised by the lopped trees, stumps, and fallen stems, also by the little huts. In the second year hill rice is dibbled in, and weeded twice. Grass then grows so rankly that grain can no longer be grown, and the site has to be relinquished. Forest rapidly grows and kills





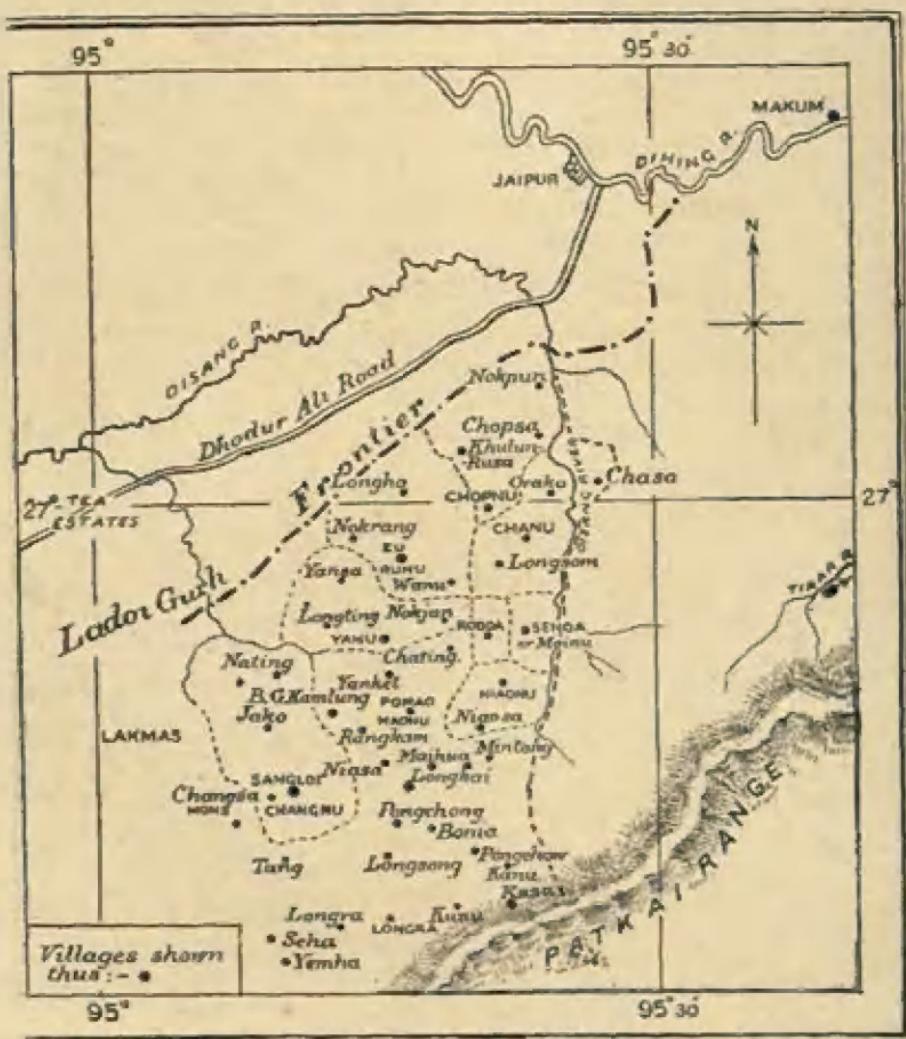




FIG. 1.—NOGA "BUKTUA."—PLATFORM BURIAL.
Assam, Nogas, Formosa, Borneo, New Guinea, Solomon Islands,
Aru Islands.

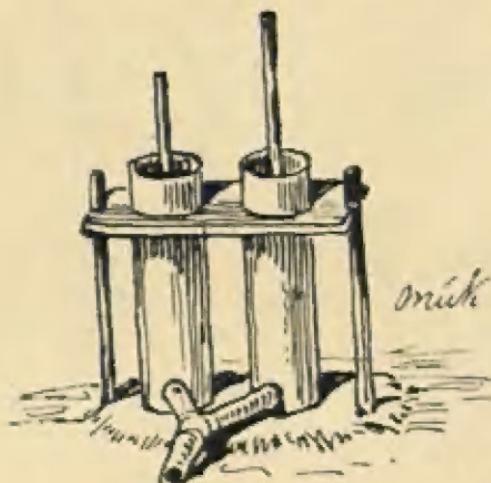
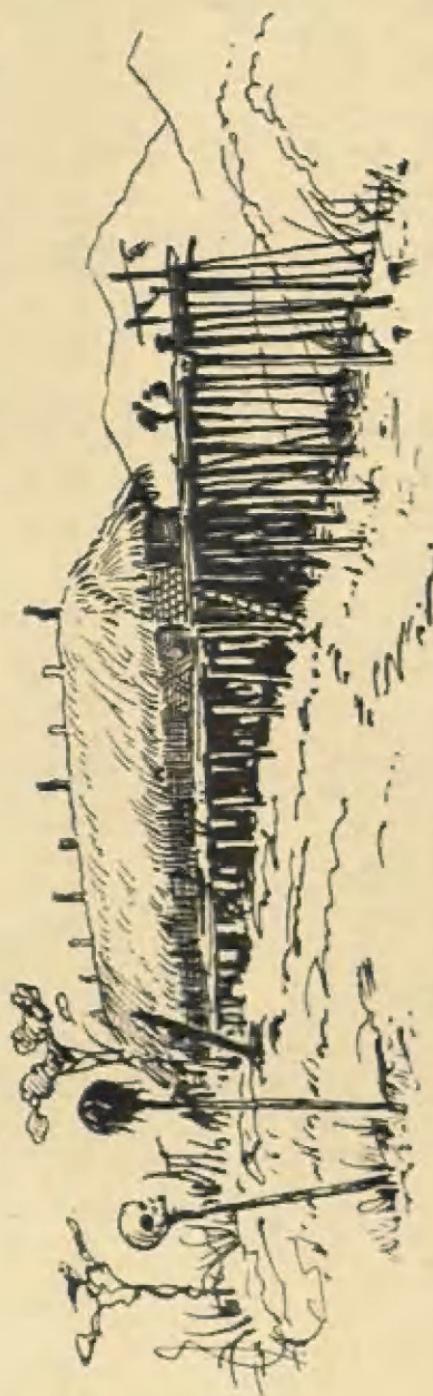


FIG. 2.—DOUBLE CYLINDER FORGE BELLOWS.
Assam, Salwin, Sumatra, Java, Philippines, Madagascar.



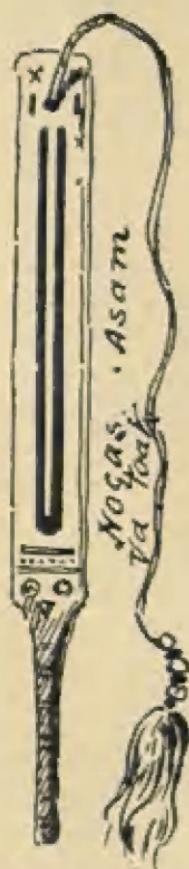
FIGS. 3 AND 4.—“TAH”—“PILE DWELLINGS,” “MOROKO,” SKULL, GOURD, COPSCIL, AND GUEST HOUSE.

Table to Women,

Awam. Formosa. Philippines. Borneo. Celebes. Sumatra. New Guinea. Solomon Islands. Madagascar.
(In some form or other.)



FIG. 5.—BAMBOO LADDER.
Assam. Tsin. Borneo.



New Britain, Philippines.



FIG. 7.—MEN'S PERINEAL BAND.
New Guinea. Assam (Eastern Nogas.)

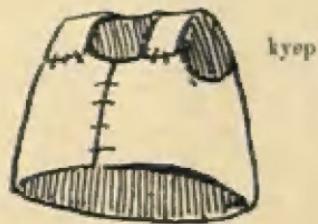
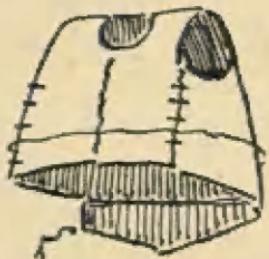


FIG. 8.—NOSE PLUGS.
Noga. Papuan.





FIG. 9.—WOODEN DISCS ON POSTS TO KEEP OUT RATS AND MICE.
Assam. Formosa. New Guinea. New Britain.



FIGS. 10 AND 11.—CUIRASSES MADE OF HIDE, SPEAR AND ARROW PROOF.
Nias, Sumatra.
Naga, Assam.



FIG. 12.—DYAK WOMAN'S CANE BELT.
Borneo.

FIG. 13.—ANDAMAN'S CANE BELT.



FIG. 14.—FIRE BY A STRIP OF CANE.
Noga Assam. Botoco. New Guinea.

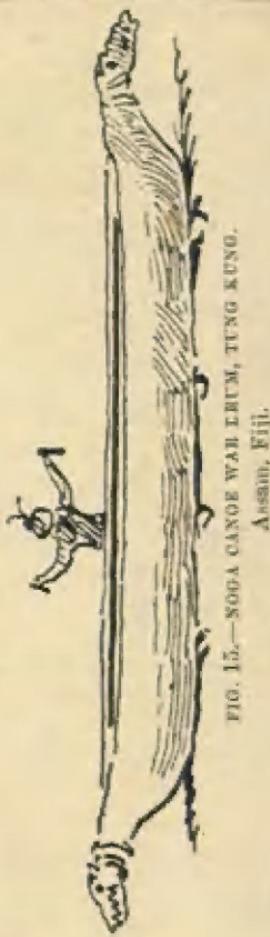


FIG. 15.—NOGA CANOE WAR DRUM, TUNG KUNO.
Assam, Fiji.



FIG. 16.—SHUM CULTIVATION.
(5th and 6th year.)

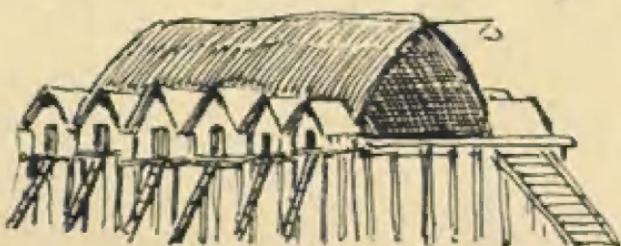


FIG. 17.—"MORONG," WITH DETACHED HUTS FOR MARRIED PEOPLE.



FIG. 18.—"MORONG" IN THE CENTRE OF A STREET WITH HUTS FOR MARRIED PEOPLE ON EACH SIDE.

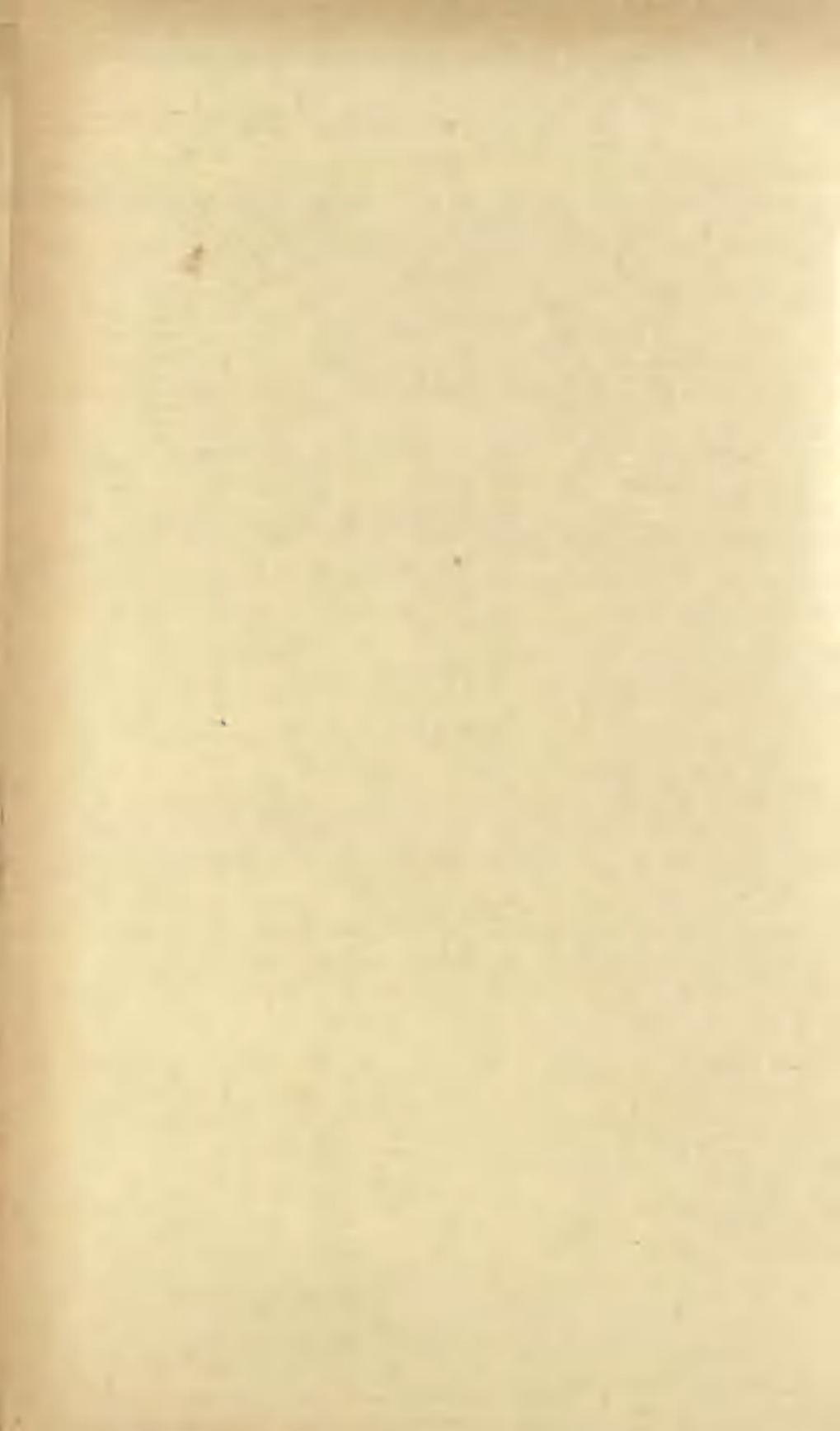
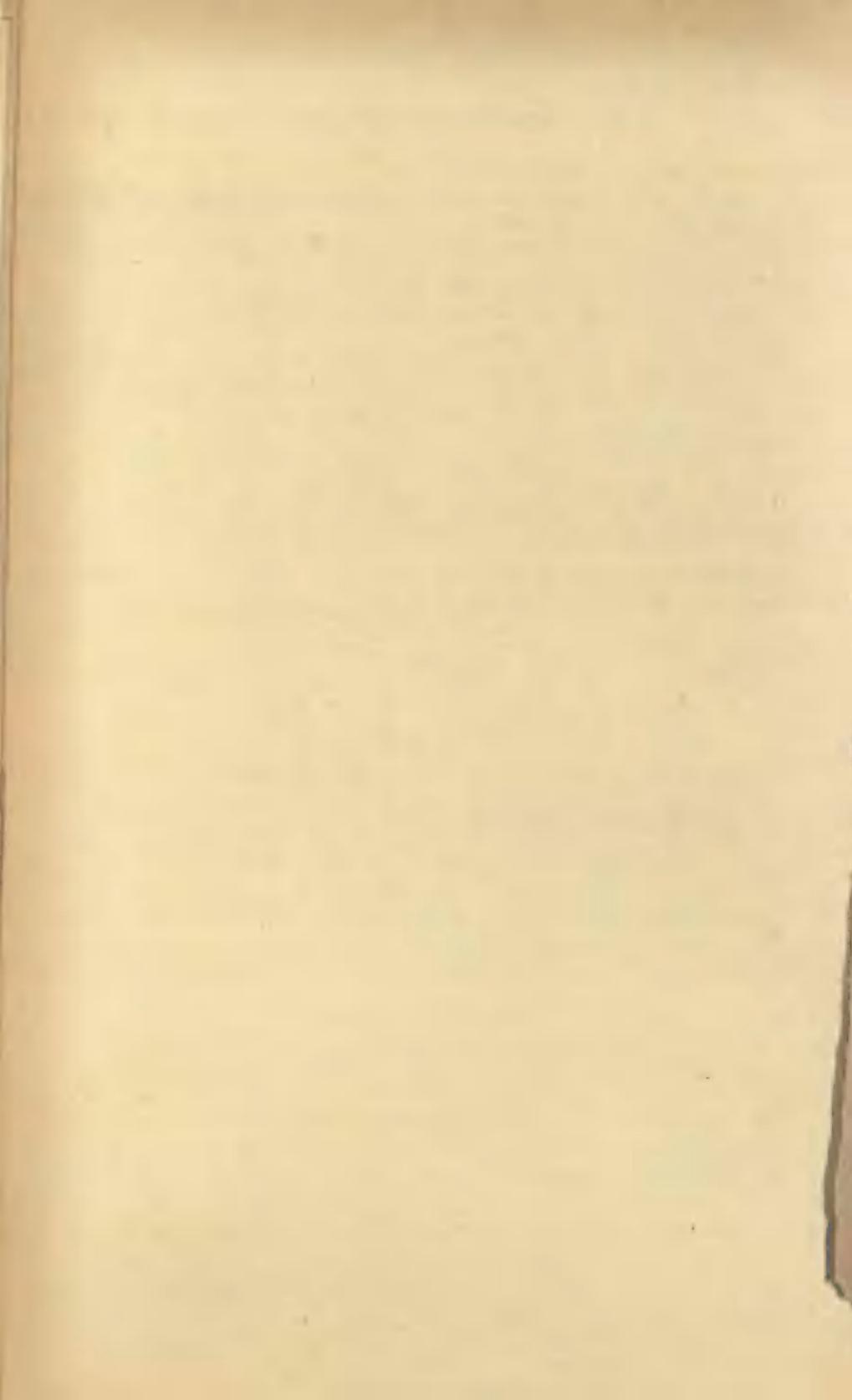




FIG. 19.—JUM CULTIVATIONS.



this grass out by the eighth or ninth year. The relative ages of jums can be known at a distance by the *sky line*, as in Fig. 19, where 1 and 2 are new jums, 3 and 4 in the third and fourth year, 5 and 6 in the fifth and sixth year, 7 and 8 in the seventh and eighth to tenth years.

In Nos. 1, 2, the tree stems stand up more or less bare.

In Nos. 3, 4, the crown of foliage is renewed.

In Nos. 5, 6, these become larger, and the stems are partly hidden by growth of young trees (Fig. 16 A, B).

In Nos. 7, 8, the tree stems are still more hidden, and the outline more even.

In the eighth or tenth year, the grass having been killed out, the forest can be again jumed. The dau alone is used for felling trees and preparing the ground. On the left (Fig. 19) the fence is shown; it is easily made of the branches and saplings, and is cattle and pig proof; gaps are left, as at G, for deer to jump into pits dug on the inside. Nogas cross these pits on a notched log.

ANTHROPOLOGICAL MISCELLANEA AND NEW BOOKS.

On the Organisation of Local Anthropological Research.

By E. W. BRABBOOK.

[Read before the British Association at Edinburgh, Section H,
4th August, 1892.]

I HAVE had the honour to be appointed by the Anthropological Institute one of its delegates, with Mr. Galton and Dr. Garson, to meet three from the Folk-Lore Society and three of the Society of Antiquaries, for discussing the manner in which the three societies may be able to work together for the purpose of organising local anthropological research in the larger sense of the word. The representatives of the Society of Antiquaries are Mr. Milman, its director, General Pitt Rivers, and Mr. George Payne; those of the Folk-Lore Society, Mr. Gomme, its president, Mr. Clodd, and Mr. Joseph Jacobs.¹ I have been authorised by my colleagues, as I happen to belong to all three societies, to lay before this section, in an informal way, what our views and wishes are, in the expectation that the discussion which may ensue will be of material assistance to us in developing the conditions and meeting the difficulties of the problem.

The ultimate aim we have in view is an ethnographical survey of the United Kingdom; a large and ambitious scheme, which it must take many years to perfect, and which at present we can only proceed with in detail, a scheme which in other countries no power short of that of the State would attempt to carry out, and for which we ourselves may in time feel justified in asking State aid. At present, however, we contemplate relying upon our own resources, with such assistance in organisation and in money as the British Association may be disposed from time to time to extend to us, and with the voluntary help of the societies in correspondence with the Association in various parts of the country, and of individual workers where the influence of those Societies does not extend. We propose to ask the Society of Antiquaries of Scotland, the Royal Irish Academy, the Royal Statistical Society, the Dialect Society, and other like bodies to join us by the appointment of delegates, and to undertake the supervision of their respective branches of the work.

¹ The suggestion is due to Prof. A. C. Haddon.

The *raison d'être* of our proposal is this: that while the Society of Antiquaries has commenced, and in several counties has completed an archaeological survey in which the monuments of antiquity are recorded on a uniform system; and the Folk-Lore Society has commenced in several counties the systematic collection of records of customs, traditions, and beliefs; and the late Anthropometric Committee of the British Association made large collections of observations on the physical characters of the people of the United Kingdom:—all this excellent work must remain incomplete, and its teaching unavailable so long as the results of it are not brought together. If these several branches of research are pursued simultaneously, in similar areas and under the like conditions, and their results brought into apposition, we shall hardly fail to find some instructive correlations, or if we do fail it will be equally instructive to find that they do not exist. Our purpose is wholly one of research, not the establishment of any preconceived views or the support of any theories, but the thorough investigation into the natural history of man as differentiated by such racial characters of all kinds as survive in various parts of the country. The Society of Antiquaries will indicate for us a district in which certain forms of ancient monument prevail; the Folk-Lore Society will enquire what remains of a long past and arrested culture are to be found in such district; the Anthropological Institute will superintend and direct the observation of the physical characters and types of feature of the population. All these data being brought together, the foundation will be laid for a comprehensive ethnographical synthesis. That is the broad general outline of the idea. I now proceed to enquire what are the materials which are likely to be at our disposal for carrying it into effect, and shall then, if time permit, state in a little detail the nature of the particular enquiries we desire to set on foot.

It has appeared to us to be an indispensable condition of our success that we should obtain the active co-operation of the local societies which are admitted to the honourable position of being corresponding societies of the British Association. What is the prospect of our doing so? The answer, and it appears to me a most encouraging and satisfactory answer, is to be found in the records of what those societies have done already. I propose to lay before you a brief analysis of so much of the Reports of the Corresponding Societies' Committee since its first appointment as relates to the work done in connection with Section H. You are aware that that excellent Committee, which gets more and more useful every year, collects and distributes among the various sections the original work which has been done during the previous year by the local Corresponding Societies. The Committee, as you may recollect, was appointed by the Council of the Association, in pursuance of a recommendation made by them at the Southampton Meeting in 1882, and adopted by the General Committee, "in order to draw up suggestions of more systematic observation and plans of operation for local Societies." Mr. Galton was most suitably

appointed its Chairman, and its first report, presented at Southport in 1883, contained a suggested code of rules, and a list of the local scientific societies which publish proceedings, drawn up by Mr. H. G. Fordham, the secretary. The suggested rules relating to Corresponding Societies were proposed by the General Committee at the Montreal Meeting in 1884, at which meeting anthropology was made a separate section. The Association has therefore already, to some extent, done for the whole field of science in general terms that which we seek to do in more detailed fashion for the one branch of science with which we have to deal; and the Reports of the Committee from year to year since that date enable us to answer the question—what have local Societies already done for anthropology?

The original contributions to anthropology, recorded in their Report for 1885, comprised the Report to the Essex Field Club of the Committee appointed by it to investigate the Loughton Camp, Epping Forest; the report of Mr. Bird on the work of the Rochester Naturalists' Club; the Rev. J. A. Preston's continued observations on the weights and measures of boys at Marlborough College; a paper on Stanton Drew contributed by Mr. J. A. Tucker to the Proceedings of the Bath Natural History and Antiquarian Field Club; one on the Celts and Druids, by the Rev. W. Beresford, read before the North Staffordshire Naturalists' Field Club and Antiquarian Society; five original papers by Mr. P. M. C. Ker-mode (2), Mr. E. B. Savage (2), and Mr. F. Swinnerton, contributed to the Isle of Man Natural History and Antiquarian Society on recent discoveries in that Island; and three papers of the same character, by Mr. C. Elecock (2) and Mr. W. Gray, read before the Belfast Naturalists' Field Club. In all, seven local societies were shown to be active in the department of anthropological research.

The Report for 1886 in like manner enumerated seven societies as contributing to the work of Section H, but only two of them were the same as in 1885, so that our number of active local societies is raised to twelve. The Dorset Natural History and Antiquarian Field Club published a study on the Belge in South Britain, by the Rev. W. Barnes; a study on the Bockley or Bockerley Dyke and others in Dorset, by Dr. W. Smart (since superseded by General Pitt Rivers' monumental volume), and on Megalithic Remains at Poxwell, by the Rev. O. P. Cambridge. The Leicester Literary and Philosophical Society published a paper on the Danish place names of Leicestershire, by Mr. J. Carter. The Penzance Natural History and Antiquarian Society published a paper on local Cornish names by Mr. T. Cornish. The Cumberland and Westmoreland Association for the Advancement of Literature and Science, on potsherds and pipkins, by Mr. R. S. Ferguson. The Cardiff Naturalists' Society, on Worlebury Camp, by the Rev. P. Scarth. The Essex and Belfast Field Clubs are societies which reappear in the list with contributions to the one from Mr. W. Cole, Mr. T. V. Holmes, Mr. W. G. Smith, and Prof. R. Meldola, and to the other from Mr. J. S. Gardner.

The Report for 1887 contained as many as thirty-four entries of papers relating to anthropology, and introduced the following seven additional societies as having published some of them:—The Croydon Microscopical and Natural History Club, published recent archaeological and ethnological observations made in the new road at Purley by Dr. A. Carpenter, and other papers of a more general character by Mr. E. Lovett and Mr. W. F. Stanley. The Hertfordshire Natural History Society published an account of British and Roman remains found in the neighbourhood of Hitchin, by Mr. W. Ransom. The "Midland Naturalist" (organ of a local society) published a paper by the lamented Miss Constance Naden, and the Literary and Philosophical Society of Liverpool, one by Dr. W. Carter. The Yorkshire Geological and Polytechnic Society published papers by Mr. W. Home on prehistoric remains recently discovered in Wensleydale, by Mr. J. W. Davis, on the relative age of the remains of man in Yorkshire, by Mr. J. R. Mortimer, on the habitation terraces of the East Riding, by Mr. S. A. Adamson, on the discovery of a stone implement in alluvial gravels at Barnsley, and by Mr. J. Holmes on the prehistoric remains in Rombald's Moor. The Yorkshire Naturalists' Union published a paper by Mr. C. Staniland Wake on the anthropology of the county. The Dumfries and Galloway Natural History and Antiquarian Society published notes by Dr. Gilchrist, on the druidical circle at Holywood. The Essex Field Club added to the names of contributors who had flourished in previous reports, those of Mr. R. W. Christie, Mr. H. Laver, Mr. F. C. J. Spurrell, and Mr. H. Stopes; the Penzance Society, that of the Rev. F. Rundle; the Cumberland Society, Mr. W. Jardine and Mr. F. Harrison; and the Cardiff Society, Mr. W. H. Fryer. Canon Ellacombe, at Bath; the Rev. W. E. Winks in South Wales; Mr. J. McKie in Galloway; Mr. A. Carmichael and Mr. H. Macbean in Iona, and Prof. Meiklejohn, investigated the history and development of place-names in their respective districts.

In the Report for 1888, the number of entries fell to twenty-seven, but that was probably due to more strict selection, some of the papers of the previous year having been rather general than local in their character. This Report adds three new names to the list of societies engaged in local anthropological work. The Royal Geological Society of Cornwall published a paper by Mr. R. N. Worth, on the discovery of human remains in a Devonshire bone cave. The Northamptonshire Natural History and Field Club published notes by Mr. T. J. George on prehistoric man in that county. The Belfast Natural History and Philosophical Society published papers by Mr. S. F. Milligan, on recent archaeological explorations in County Sligo, and by Mr. W. H. Patterson on some later views respecting the Irish round towers. To the contributors of papers to the Essex Field Club bearing upon our work, are to be added the names of the Rev. W. F. Evans and Mr. J. C. Shenstone; to those to the Bath Club, that of Mr. A. I. King; to the Leicester Literary Society, Mr. F. T. Mott; to the Yorkshire

Geological Society, Mr. J. E. Bedford and Mr. T. Boynton; to the Dumfriesshire Society, Mr. F. R. Coles and Mr. J. Wilson; to the Belfast Field Club, Canon Grainger, Mr. W. J. Knowles, and Mr. W. Swanston.

In the Report for 1889, the number of contributions to anthropology recorded rose to forty-five. Four new societies appear in the list. The Manchester Geological Society published an account of small flint implements found beneath peat in the Pennine Chain between Huddersfield and Oldham, by Messrs. Law and Horsfall, and of a new archaeological discovery on the Ship Canal at Sticking Island, by Mr. C. Roeder. The Rochdale Literary and Scientific Society published a paper by Mr. C. Heape, and others were published by Societies in Edinburgh and Inverness respectively. The Marlborough observations, formerly conducted by Mr. Preston, were continued by the Rev. T. N. H. Smith. To the contributors to other local societies are to be added the names of Dr. Hicks, in Hertfordshire; Mr. T. F. Plowman in Bath; the Rev. W. S. Lach-Szyrma in Penzance; and Mr. M. Browne in Leicester.

The Report for 1890 enumerates thirty-five papers, and adds two societies to the list, viz., the Midland Union and the Glasgow Philosophical Society. It adds also several names of individuals to those already given as authors of local papers.

That of 1891 has forty entries, which, as between the thirty-five of the previous year, and the forty-five of the year before that, may be taken to establish a mean of the number of communications that may be expected per annum from local societies as the case now stands. With more complete organisation no doubt many more might be procured. Only a single society (in Kent) is added to the list. The Dumfriesshire and Galloway Natural History and Antiquarian Society alone furnishes seven papers out of the forty, referring to local prehistoric and Roman antiquities and folk-lore. The Isle of Man Natural History and Antiquarian Society follows with five papers, four of which related to local flint implements, burial mounds, and antiquities. Finally, the Report of 1892, delivered yesterday, adds four more societies to the list.

We gather from this that during the eight years, 1885-92 (inclusive), as many as thirty-three local societies have been engaged in valuable original anthropological work, and at least one hundred individuals have contributed anthropological papers to their transactions. They occupy the whole country from Penzance to Inverness, and from Rochester to Belfast, and they assuredly form a nucleus for the operations we have in contemplation. The Committee has already done much to stimulate united action among these societies, and we have really little more to do than to take up their work and specialize it for the purpose we have in view.

Before passing from the question of local anthropological work in connection with the British Association, I may refer to that of the Anthropometric Committee, which sat from 1877 to 1884, under the presidency, at first of Dr. Farr, and afterwards of Mr. Galton,

and of which Mr. Galton was the first secretary, and was succeeded by General Pitt Rivers, and ultimately by myself. Their several reports, of which the one presented in 1883, and drawn up by Sir Rawson Rawson and Mr. C. Roberts, contained the final conclusions, and was an exhaustive review of the whole work, are full evidence of the necessity and usefulness of local organisation in this matter.

Besides the thirty-three corresponding societies which have already done anthropological work, there are still larger numbers which have as yet busied themselves with the branches of science cultivated by the other sections of the association, but upon whom we may confidently count for assistance, when we are prepared to inform them exactly what we wish them to do. So also there is the body of local secretaries of the Society of Antiquaries, men specially selected (not necessarily from among the Fellows) as having ready access to all the antiquarian work that is going on in their respective districts, who hold their appointments for a prescribed term of four years, and are not re-elected unless they have shown signs of some activity during that period. There are, again, the numerous local archaeological societies in union with the Society of Antiquaries. In connection with the Folk-Lore Society and the Anthropological Institute, there are also many skilled workers in various localities, whose assistance we shall obtain.

I have shown, I think, the practicability of organising local anthropological research; but there is one condition essential to our success. We must be prepared to tell the local workers exactly what we want them to do, and how we want them to do it. That is of course the business of the Conference of Delegates of which I have the honour to be, in a certain sense, the representative on this occasion, and as that stage in their proceedings is one which demands from them the most careful deliberation, I am not prepared to lay before you in their name any fully developed scheme. Indeed, they will have to report to their constituents before they can definitely publish one. But I think I am not over-bold if I claim to be sufficiently in possession of their general views to be able to lay before you, on my own responsibility, some of the heads of the scheme which they will probably ultimately adopt, the more so as each of the three Societies has already issued a guide to explorers in its own particular domain.

First, as to the Society of Antiquaries. Our colleague, Mr. George Payne, will probably kindly furnish us with a brief code of instructions as to the manner in which an Archaeological Survey should be carried out; but he has already given us an admirable object lesson as to how to do it in his "Archaeological Survey of the County of Kent," communicated to the Society on 28th June, 1888. It consists, first, of a map of the county, drawn to a quarter-inch scale, on which are marked all recorded discoveries by a simple code, which contains only thirteen distinct characters, distinguished into Pre-Roman (black), Roman (red), and Anglo-Saxon (blue), by means of colour. Second, of a topographical index, arranged alphabetically according to locality, and specifying the period, the

nature of the discovery, and where recorded. Third, of a bibliography, serving first as a key to the abbreviated references in the topographical index, and second as a list of works on or containing references to the antiquities of the county which may be consulted with advantage. It should be noted that the topographical index is not confined to the authorities which are specified in the bibliography, for many discoveries are vouched for by "Dr. Evans' note," "Mr. St. John Hope's note," "G. Payne's journal," and the like; while for others the reference is to the British Museum, the Maidstone Museum, or the Dover Museum. Fourth, of a valuable introduction, in which Mr. Payne compares his map with the Itinerary of Antoninus, discusses the vexed question of the situation of the various stations, points out the paucity of the remains in the weald, where once was the almost impenetrable forest of Andred, and comments on the probable Celtic origin of the great oppida of the county. The like work has been done by Sir John Evans for Hertfordshire, and is in progress for other counties. In assisting to carry out this important branch of the undertaking, we shall have the co-operation of the Corresponding Societies Committee, which has already on several occasions urged the importance of a systematic survey of prehistoric remains upon its members. We may perhaps hope to be the means of harmonising the two bodies, and securing their working with uniformity in this direction, and thus avoid duplication of labour.

The work of the Society of Antiquaries in this matter deserves the first consideration from us, not only because of the antiquity and reputation of the Society, but also because it serves as an excellent starting point for the rest of our work. When an archaeological map of any county has been constructed, and some particular region of that county, the smaller the better, is observed to be specially rich in any one kind of evidence of ancient occupation, that region will assuredly be an excellent hunting ground for the enquiries into folk-lore and into physical anthropology, and a most hopeful locality for the discovery of any correlations that may exist between them. By means of such a map, we shall be better able than by any other means to spot the places where research in the other directions we have in view is likely to prove most profitable. I have the authority of Mr. Galton—and, on such a point there is no higher living authority—for the opinion that from the thorough observation of a limited area, more useful results are to be expected than from the collection of a much larger number of observations over a wide district, where migration and crossing and other disturbing causes may tend to vitiate the conclusions arrived at.

It would seem, therefore, that almost our first step should be to render what aid we can in the completion of that great branch of our work which the Society of Antiquaries and the Corresponding Societies Committee have already undertaken. But as both these bodies have made a considerable commencement of the survey, we have already some ground to go upon in the other branches of our work in those counties and districts for which an Archaeological

Survey has been published. I proceed therefore to state, in brief and general terms, what the Folk-Lore Society and the Anthropological Institute will expect from observers.

The Folk-Lore Society has commenced work in two directions. It has already printed the first of a series of publications under the title "County Folk-Lore," in connection with the organisation of County Committees for the collection and publication of local folk-lore all over the British Isles. The first county attacked is Gloucestershire, edited by Mr. E. Sidney Hartland, whose prefatory remarks have a strong bearing on our present purpose. He says, "the examination of traditional customs and institutions, as well as of traditional beliefs, and what by a happy contradiction of terms, has been called traditional literature, has proved that human thought, under very different conditions, is everywhere essentially the same. No sooner, however, has this been done than the question arises whether distinctions of race may not be discovered, in spite of—nay interwoven with—this very identity. When a people is itself of composite origin, or when, though physically pure, it has been subjected to alien influences, can we assign to each component part, or to each alien influence, its due share in the civilisation finally attained? Can we define the direction and extent of the thought of any pure race, if there be any pure races of mankind, as evidenced by its traditions? Can we ascertain how far such a race, coming into contact with other races, either higher or lower in culture, may have affected them with its practices or with its speculations?" And he proceeds to argue, with great force, that the British Islands offer these problems in some of their most complicated forms. As a starting point for the work of collection it is desirable to know what has already been recorded. County histories, "Notes and Queries," the transactions of the local clubs and archaeological societies, and the mediæval chroniclers and gossip mongers, are obvious sources of information. The first step is therefore to extract and arrange alphabetically the items of folk-lore contained in these and other publications; and this should be done by way of mere collection and compilation, stating the authority for each, but leaving critical appreciation for a subsequent stage of the proceedings.

The second branch of the work to be done specially for the Folk-Lore Society, is the collection of fresh observations. For guidance in this, the Society has published a handbook of folk-lore, edited by Mr. Gomme, now its President, then its Director. In this work folk-lore is defined, and the subjects which compose it are broadly classified into four groups:—superstitious beliefs and practices, traditional customs, traditional narratives, and folk sayings. These and their various sub-groups are fully described, and ample direction given to the observer, the total number of points suggested for enquiry being not far short of one thousand. Take, for example, one or two incidental observations: "a Scotch mother will sometimes leave an open Bible by her child to keep the fairies away"; "in some parts of England it is unlucky to give a light

from your pipe on New Year's Eve." "When Scotch children play at 'Tappie, tappie Tousie, will ye be my mon?' they are unconsciously acting over again by traditional custom the symbolic formula of the days of vilenage." The observer who comes across evidence of a local custom is requested carefully to record its precise nature, the extent to which it is practised, the traditions as to its antiquity and probable origin. In each case the name and situation (county and parish) of the place where the custom is or was observed is to be carefully recorded, and it is important to note whether the custom is obsolete or is still in use. Folk tales have been distinguished in seventy different types, and even this list is not exhaustive, but it is sufficiently representative; and the collector, with this book in his hand, will not fail to identify the type of any story that may be related to him, and is requested to take a careful note of every variation in its setting and of any fragment of a tale that he may hear. In Scotland, especially, superstitions survive in the form of ballads, and customs are associated with songs. Many rhythmical invocations known in Scotland are of very ancient date. Proverbs are a valuable branch of folk-lore and are classified under the four principal divisions of anthropological, political, physical, and historical. Finally, and this is the most important for our present purpose, full instructions are given as to the way to collect folk-lore—where to look for it—whom to ask and how to ensure their interest—the local doctor and lawyer, the parish clerk, the innkeeper, and so forth—the oldest inhabitant, the small employer, &c.

The Anthropological Institute has been equally regardful of the needs of the observer. It has just issued, by the authority and with the assistance of this Association, a second edition of the "Notes and Queries on Anthropology" which was first published in 1874 upon plans laid down by General Pitt Rivers. The division which he adopted under the two heads of Constitution of Man and Culture now takes the form of Anthropography and Ethnography. These have been allotted to two most competent editors, Dr. Garson for the first, and Mr. C. H. Read for the second. The first part is practically a new work, the sections contributed to the first edition by Dr. Beddoe, Mr. Galton, and the late Charles Darwin being retained, and all the others rewritten by Dr. Garson, sixteen special medical sections being added, each written by a physician of recognised eminence in the branch of medicine of which it treats. The principal feature of this part, from our present point of view, is a "Schedule of Observations on External Characters," copies of which can be supplied separately, which observers will be asked to fill up. After the necessary preliminary particulars, it is to set forth the descriptive characters, colour of skin, eyes, &c., to contain twenty essential measurements and fifteen additional ones, with certain special measurements. This schedule is accompanied with an explanation, containing some judicious practical hints such as this "while the descriptive characters are being recorded the observer may engage the subject in conversation, so as to gain his

confidence and overcome any fear or repugnance he may have to be measured." The essential measurements are most important for the differentiation of races, as they enable the whole figure of the subject to be reproduced and compared with those of other races. The special measurements are more particularly intended to be taken by medical men. The number of types of colour of eyes, hair, and skin has been greatly reduced from the complete series formed by Broca, which was contained in the first edition of the work, and though the requirements of the schedule may appear to be numerous and somewhat complicated, they are really as simple as the nature of the case admits of. In the practical application of the results obtained by means of them, it may have to be considered whether the adoption of the card system may not economise labour.

In this branch of the work we have the advantage of the accumulated experience of the Anthropometric Committee and of Mr. Galton's anthropometric laboratory; and these throw into a high light the difficulties that surround it. To produce results that are at all trustworthy, the manner of obtaining them must be precisely similar, and this is a matter very difficult to secure. The personal equation enters to a great extent into anthropometric measurements. How this difficulty is to be met must be a matter for future consideration; whether on the one hand by limiting the observations asked for and accepted to a very few centres, where skilled observers can be obtained, and the adoption of rigid canons of accuracy secured, or on the other hand by seeking for anthropometric workers in every direction, and trusting rather to the general laws of numbers than to the skill of individuals to eliminate errors. I myself should incline rather to the latter alternative. In the words of Sir J. F. W. Herschell: "If an exceedingly large number of measurements or weights be taken—supposing no bias, or cause of error acting preferably in one direction, to exist—not only will the number of small errors vastly exceed that of large ones, but the results will be found to group themselves about the mean of the whole always according to one invariable law of numbers; and that the more precisely, the greater the total number of determinations. . . Rude and unskilful measurements of any kind, accumulated in very great numbers, are competent to afford precise mean results. The only conditions are the continual *cavimus mensurandi*, the absence of bias, the correctness of the scale with which the measures are compared, and the assurance that we have the entire range of error, at least in one direction, within the record." If this remark applies to rude and unskilful measurements, it should be still more applicable to such measurements as we may hope to collect from the zealous and well-informed men who alone would be expected to comply with our invitation to supply a series of observations, either upon Dr. Garson's method or upon any modification of it which it may appear desirable hereafter to adopt, even without such absolute uniformity as we cannot perhaps expect to obtain.

In one branch of the anthropometric work, I feel especial interest, that of the collection of photographs, as it carries out a suggestion made by myself to the Glasgow meeting of the Association in 1876, and included in the reference to the Anthropometric Committee of that year. In a paper which I prepared for that Committee, and which was printed for their use, but has not been published, I proposed that negatives should be obtained, in full face and also in profile, in each district, of individual adults answering to the description "very pure" in the Committee's schedule of statistics of nationality—that is, a person all whose four grandparents, at least, with parents and himself are from the same district. The Committee resolved on 6th June, 1877, to carry this proposal into effect by obtaining as large a number as possible of photographs of persons from different localities, whose descriptions should be, as far as practicable, recorded in the manner laid down in the Anthropometric Instructions. This resolution was referred to a Sub-Committee, which was again appointed in the years 1877, 1878, 1879, and 1880, and made considerable collections, which are now for the most part in the custody of the Anthropological Institute. In 1881 a separate Committee was appointed by the Association for the purpose, with Mr. Park Harrison as Secretary, and continued to be re-appointed until 1885, when it merged in a Committee "for the purpose of defining the racial characteristics of the inhabitants of the British Isles," a mission of which I think the Committee failed to discharge itself, and it accordingly lapsed. In 1878 the Committee appealed (through the "Photographic News") to professional and amateur photographers for aid. The present occasion appears to me to afford an excellent opportunity for taking up its work, with a better prospect of carrying it to a successful conclusion.

Mr. Park Harrison's Report of 1882 contains an interesting statement of the scientific bearings of the subject, and of the manner in which the Committee had proceeded in the identification of types from the photographs collected, which they divided into three principal groups.

Mr. Galton has kindly favoured me with the following practical suggestions as to the working of this branch of our undertaking—"Make a selection of villages, as representative of already recognised varieties—pure Welsh, Sussex, Yorkshire, Midlands, Norfolk, &c.; take photographs, full and profile (of right side), in all cases with light from right side and above, of at least a certain number of adults (not bearded if possible), and of ages about twenty-two to thirty-five, also of women. The photographs to be of a scale not less than $\frac{1}{2}$ of an inch from eye to lips. Quarter plate size for each, full and profile. Measure select dimensions of each of them, according to Anthropological "Notes and Queries." Required at least seventy-five males and seventy-five females of each type, three hundred photographs in all." I hope that these suggestions, with any others that may arise on the further consideration of the question, may be referred to the Corresponding Societies' Com-

mittee, and receive their approval and support. I have since had the pleasure of some conversation with Mr. Galton on the question whether it would not be desirable to collect photographs of children. They frequently show marked racial peculiarities, undisguised by the modifications which sometimes arise with the advance of years, and the acquirement of habits that more or less distort or disturb the features, and being assembled together in schools and elsewhere, might be comparatively easy to select and to obtain. When photographs in sufficient number from any particular district had been procured, Mr. Galton's composite system might be usefully employed to obtain a general definition of the racial features; as the result of that system is to diminish the effect of individual peculiarities and to reduce a number of persons, each slightly varying, to a common type. Used upon a number of specimens in which the broad features were the same, it would give the necessary prominence to these, and would sink accidental slight differences.

The second part of "Notes and Queries" on Anthropology (ethnography) relates to matters which have already to some extent been dealt with in connection with the Folk-Lore Society. For the present edition, the writers who contributed to the first edition in 1874 (including Sir John Evans, Mr. Franks, Dr. Tylor, General Pitt Rivers, Sir John Lubbock, Sir Henry Howorth, and others), have revised their contributions and brought them down to date; while numerous fresh original sections have been added by Mr. Read, the editor, Mr. Flinders Petrie, Professor W. Ridgeway, Mr. J. E. Frazer, Professor A. C. Haddon, and many others. The book possesses, therefore, the highest possible authority as a manual of the subjects on which it treats. Besides the various chapters which relate to the matters treated of more at length in the Hand Book of Folk-Lore, those relating to archaeology and statistics contain much useful information; but the primary object of the work is to deal with observations of savage tribes, and it is not therefore in all respects applicable to an Ethnographical Survey of the United Kingdom.

It would seem from the review I have attempted to give of the machinery provided by the three societies at present engaged in the matter for the guidance of those who may be found willing to undertake to assist them in their work, that it is ample almost to excess. The local society which undertakes one or more branches of the enquiry will find abundant information as to the work to be done and the means of doing it in harmony and collaboration with the rest in the publications of one or other of the societies. Indeed, it will be exceedingly useful, and almost necessary, for the Joint Committee to select from this abundant material, those portions which are of paramount importance, and to reduce the essential part of it into the compass of a small pamphlet, which would be a real handy book for the local enquirer, and place at his disposal in a few lines the pith and the marrow of what he is expected to do.

There is one remark which ought to be made before I conclude; and that is that the matter is one which will not brook undue delay. It is so large an undertaking that it should not be entered upon with unwise haste; but all the while we are waiting to begin, the evidence is slipping out of our grasp. The centripetal forces, which impel the country folk towards our great towns, and the rapid means of transit from place to place, of which even the poorest are constantly availing themselves, are fast effacing all special local peculiarities, and inextricably mixing the races of which our population is composed. The survey we now propose to make could have been better made if it had been begun fifteen years ago, when the Anthropometric Committee was first appointed; infinitely better sixty-one years ago, when the British Association began its beneficial existence. Wait a few years longer, and it will be impossible to do it at all.

In this as in many other concerns of life, we must do what we can while we have the opportunity, for no second opportunity can be given to us. With respect to ourselves and the objects of our research, we may well say, in the words addressed by "Pleasure" to the hero of old time :

" Currit mortalibus grym,
Nec nasci bis posse datur; fugit horu rapitque
Tartareus torrens, ac secum ferre sub umbras,
Si qua animo placuerit, negat." (Silius Italicus.)

Family Names from the Irish, Anglo-Saxon, Anglo-Norman, and Scotch considered in relation to their Etymology, &c. By THOMAS G. GENTRY. Philadelphia, 1892.

MR. GENTRY is an ornithologist and the author of various works on the birds of the United States, the names of some of which appear on his title page. It is possible that he may have found a temporary change of study profitable, or at least agreeable, though his etymological researches can scarcely be said to afford profitable reading for others. Those who have paid any attention to the derivations of family, place, or other names usually become cautious, at least, and must often feel that explanations given by the most learned and careful writers might in some cases be shown to be erroneous by persons having a special knowledge of the history of the terms in question. It is difficult to recall a better illustration of the difference between a plausible but unsound derivation and a satisfactory one than that of the French journalist who stated that the nickname "bobby" was given to English policemen because they could usually be bribed with a "bob," or shilling. Had he known of the epithet "copper," he would, no doubt, have felt his view confirmed, and have added that the latter term was applied to the lowest class of constables, who did not refuse halfpence. Forty or fifty years ago "peeler" was probably as popular a word as "bobby"; had it remained so

the Frenchman's mistake could not have occurred. Many of the explanations given by Mr. Gentry have, however, by no means so much apparent evidence in their favour as that of the Parisian. *Cumberland*, primarily a place name, but also a family name, is stated by Mr. Gentry to mean "a region of valleys." This is worse than the attempt of "a learned writer," quoted by Camden, who suggested that the county was so-named because much encumbered with lakes and mountains. Of course Camden himself knew that Cumberland was the land of the Cumbri or Cymry. Again, the name *Holme* or *Holmes* is a term used where Scandinavian place-names prevail to denote either an island in a river or alluvial flats bordering a stream and almost surrounded by it. One such flat would be a *Holm* or *Holme*, collectively they would be *Holmes*. Mr. Gentry, however, who never appears to think there can possibly be doubts about any of his explanations, has the following one in this case:—

"*Holme*, *Holm*, a sea, a billow.

Holmes, *Holme*; *s* for *sun*, son. Son of Holme."

To the groups of family names which are primarily place-names belong, of course *Husley*, *Topley*, &c. Whether *Husley* was originally *Hogsley* (or *lea*) or *Hawksley* may perhaps be doubtful, but it was almost certainly one or the other. But Mr. Gentry thus accounts for the name:—

"*Husley*. *Huslie*, from *hus*, *husx*, or *husc*, irony, slight, contempt, reproach, and *lie*, like. Ironical-like, disgraceful, contemptuous, vile."

Similarly *Topley* may have meant either an upper ley, or *lea*, or a *tup*, or ram's, ley; the equivalent, in the latter case, of a spot elsewhere styled a *Ramsbottom*. Mr. Gentry's explanation is:—

Topley. Top, a ball; *lie*, like. Resembling a ball.

The names *Kendall*, *Tindall*, and *Lonsdale* are thus interpreted:—*Kendall* is said to mean "valley-kindred"; *Tindall*, "a tin valley"; and *Lonsdale*, "landsdale"; no suspicion having crossed our author's mind that the names are simply those of river-valleys.

If we turn to a different class of family names and glance at those the first syllable of which is *Mac*, we find them dealt with in the same fearless manner. Thus *McCool* is said to mean "Son of the hinder part"; while *McCullough* is "son of the lake of the hinder part"; *McRae* is "son of the moon, one influenced by the moon, a lunatic"; and *McNarr*, "son of a fool."

Explanations quite as audacious as any given occur on every page and make the work an exceedingly amusing one, though utterly unfit to afford instruction.

[T. V. H.]

"Buddhism primitive and present in Magadha and in Ceylon." By R. S. Copleston, D.D., Bishop of Colombo. (Longmans, 1892.) 8vo. pp. 501. "The scope of this work is limited to the history and description of that particular stock or branch of Buddhism which has been established and continued in Ceylon.

In regard to the history, the reader of this book will be invited to a conclusion midway between scepticism and credulity. Starting with a strong inclination to believe ancient records rather than to set them aside, I have been compelled to doubt whether we have evidence which can be called historical for the centuries before B.C. 260, and to assign to the era of Asoka an immense importance, as that in which Buddhism and Buddhist literature took the shape in which we know them. At the same time I see no reason to doubt that the literature that has come down to us contains material which was nearly or quite contemporary with Gotama, or that what it tells us of his life and work is, in its main features, true." Some of the subjects dealt with are, the relation of Ceylon Buddhism to the original stock life of Gotama the ideal of Buddhism, the four truths, the moral system, caste, critical history of the canonical literature, Mahinda and the conversion of Ceylon, between Mahinda and Buddhaghosha, the community in the middle ages, later revivals of the community, the Buddhism now taught in Ceylon, present customs, &c.

"Finger Prints." By Francis Galton, F.R.S. (Macmillan, 1892.) 8vo. pp. 216. Illustrated. The author considers the subject under the following divisions:—1. Introductory. 2. The previous employment of finger prints among various nations, which has been almost wholly confined to making daubs, without paying any regard to the delicate lineations with which this book is alone concerned. 3. Various methods of making good prints from the fingers are described at length, and more especially that which I have now adopted on a somewhat large scale, at my anthropometric laboratory, which, through the kindness of the authorities of South Kensington, is at present lodged in the Galleries of their Science Collections. 4. The character and purpose of the ridges, whose lineations appear in the finger print, are discussed. 5. A discussion of the various patterns formed by the lineations. 6. The question of persistence; whether or no the patterns are so durable as to afford a sure basis for identification. 7. An attempt is made to appraise the evidential value of finger prints by the common laws of Probability, paying great heed not to treat variations that are really correlated as if they were independent. 8. The frequency with which the several kinds of patterns appear on the different digits of the same person, severally and in connection. 9. Various methods of indexing are discussed. 10. The practical result of the enquiry, namely, its possible use as a means of differentiating a man from his fellows. 11. Heredity. 12. Their use in indicating race and temperament. 13. The question is discussed, and answered affirmatively, of the right of

the nine fundamentally differing patterns to be considered as different genera, or species, as the case may be.

"The Speech of Monkeys." By R. L. Garner. (Heinemann, 1892.) 8vo. pp. 260. The views of the author are expressed on page 70: "They talk with one another on a limited number of subjects, but in very few words, which they frequently repeat if necessary. Their language is purely one of sounds, and while these sounds are accompanied by signs, as a rule, I think they are quite able to get along better with the sounds alone than with signs alone. The rules by which we may interpret the sounds of Simian speech are the same as those by which we should interpret human speech. If you should be cast away upon an island inhabited by some strange race of people, whose speech was so unlike your own that you could not understand a single word of it, you would watch the actions of these people and see what act they did in connection with any sound they made, and in this way you would gradually learn to associate a certain sound with a certain act, until at last you would be able to understand the sound without seeing the act at all; and such is the simple line I have pursued in the study of the speech of this little race."

"Makers of Modern Thought; or, Five Hundred Years' Struggle (1200 A.D. to 1699 A.D.) between Science, Ignorance, and Superstition." By David Naysmith, Q.C. (Philip, 1892.) 2 vols. 8vo. pp. 560. "That in the social, no less than in the physical, history of our race the doctrine of 'evolution' cannot be ignored but few would contest. The term 'evolution,' however, when applied to social man, is so obviously indefinite as imperatively to demand careful consideration. Is the material, the moral, the mental, the theological, or whatever element of social man, intended? In order to express the class of evolution present to my mind, no other adjective than 'spiritual' satisfied me. What I intend by 'spiritual evolution' I have attempted to explain in the introduction. This book is in short the illustration of my meaning, and is intended to show the distinction between the labours of individuals and the outcome of their combined efforts." The lives sketched are, Roger Bacon, Dante, Petrarch, Boccaccio, Wycliffe, Chaucer, Huss, Gutenberg, Caxton, Columbus, Machiavelli, Copernicus, Luther, Rabelais, Loyola, Montaigne, Brahe, Francis Bacon, Shakespeare, Galileo, Kepler, Harvey, Grotius, Hobbes, Descartes, Pascal, Spinoza, Locke, Newton.

"Up the Niger." Narrative of Major Claude Macdonald's mission to the Niger and Benue rivers, West Africa. By Captain A. F. Mockler-Ferryman. (Philip, 1892.) 8vo. pp. 326. The volume contains very valuable information with regard to the district visited, and is well illustrated and indexed. A chapter is devoted to native music and musical instruments, and remarks on folk-lore and native dialects are scattered through the volume.

"History of the New World called America." By E. J. Payne. (At the Clarendon Press 1892.) Vol. i. Svo. pp. 546.
"Only one part of the present volume—that in which the social economy of the advanced aborigines of the New World is traced to its physical conditions—appears to require any remarks by way of preface. In this part of the work the writer has taken the unusual course of explaining the facts under investigation by a theory of human advancement not only not generally recognised, but not hitherto formally enunciated. Some may find it paradoxical, or perhaps merely trivial, to assign to advancement no loftier origin than the organised provision of the food supply on an artificial as distinguished from a natural basis. In the present volume the writer's view is not presented in its complete form. In the next volume, in which the second book of the work will be brought to a conclusion, it will be shown how the organisation of food-provision on the artificial basis has been combined with that of defence, and how communities in which these combined organisations have been fully elaborated have extended their boundaries at the expense of others whose social arrangements were less advanced The problems to which the writer's attention has been more immediately directed (are) to restore, if possible, the true features of the advanced communities of the New World, to analyse their social structure and economy, to measure by some definite standard the degree of progress they had attained, and to trace their history, so far as it can be recovered, distinguishing what can fairly be accepted as fact from that which can be shown with reasonable certainty to be fabulous, constitute in the whole a task of some magnitude: a task, it may be, which cannot be satisfactorily accomplished by any single-handed effort. In the course of such inquiries, the questions are naturally suggested (1) whether the advanced aboriginal communities can properly be ranked as belonging to the class of civilised nations? and (2) whether their advancement, whatever rank may be assigned to it, was imported, either wholly or partially from the Old World, or was entirely of indigenous growth? The older writers usually represented the Mexicans and Peruvians, more especially the former, as highly civilised people: later critics have described them as utter savages. The truth lies between these extremes, but it is nearer to the latter than the former." Some of the more important sections of the work are: The dependence of the discovery on physical conditions, the first historical process involving the discovery, the tendency to westward exploration, the second historical process, the Northmen in Iceland, the third process, rediscovery of the Atlantic Islands, the discovery, voyage of Columbus, and other explorers, aboriginal America, condition of agriculture, &c., religion worship of running water, earth, heavenly bodies, Sun-worship in Peru, Mexico, New Granada, &c. The volume is a most important contribution to our knowledge of the New World.

"**Studies in Mohammedanism.**" Historical and doctrinal, with a chapter on Islam in England. By J. J. Pool. (A. Constable, 1892.) 8vo. pp. 419. The author states that the work is an attempt to provide a popular text-book on the wide field of Mussulman faith, practice, and history, and to show wherein the religion of Mohammed falls below the religion of Christ. A chapter is devoted to an account of the introduction of Mohammedanism into England at Liverpool.

"**British New Guinea.**" By J. P. Thomson. (Philip, 1892.) 8vo. pp. 336. The volume deals with all that is known of the island under the following heads; historical sketch, the Louisade Archipelago, the D'Entrecasteaux group, Chads and Cloudy Baya, spaciousness and savagery of the natives, South-East of Port Moresby, North-West from Port Moresby, ascent of Mount Victoria, and exploration of the Owen Stanley range, the Lower Fly river, middle and upper Fly river, west from the Fly to the Anglo-Dutch boundary, north-east coast. There is much valuable information on the ethnography, geography, paleontology, fauna, flora, and dialects of the island. The work is well illustrated and has an excellent map.

"**Medium.**" By W. M. Flinders Petrie. (D. Nutt, 1892.) 4to. pp. 52. (37 plates.) This valuable work gives the account of the exploration of Medium forty miles south of Cairo. The writer deals with the pyramid and temple, the Mastabas and burials, the sculptured chambers, early hieroglyphs, the small antiquities, the inscriptions, varieties of ancient Kohl, Egyptian colours, and the Coptic papyri. The reproductions in colour are extremely well executed and the whole work may be taken as an example of the most modern methods of exploration.

"**The Great Indian Religions,**" being a popular account of Brahmanism, Hinduism, Buddhism, and Zoroastrianism. By G. T. Bettany. (Ward, Lock, 1892.) 8vo. pp. 286. The work, as one of the "World's Religious Series," gives a valuable popular account of the religions mentioned in the title. The volume is well illustrated and cannot fail to become a useful work for beginners.

"**English Folk Rhymes.**" A collection of traditional verses relating to places and persons, customs, superstitions, &c. By G. F. Northall. (Kegan Paul, 1892.) 8vo. pp. 565. The work contains a large collection of rhymes bearing on places, history, superstition, divination, customs, the animal kingdom, games, the almanack, weather, husbandry, &c. References to the works consulted are given in all cases and the majority of the proverbs are very fully explained.

"**Stories told in an African Forest.**" By A. J. Mounteney Jephson. (Sampson Low, 1893.) 8vo. pp. 168. The volume

deals in a very pleasant way with various phases of African travel, and is likely to induce young people to take an interest in Anthropology. The book is excellently illustrated.

"The Underground Life." By David Macritchie. (Privately printed, 1892.) pp. 47. The object of the pamphlet is to draw attention to the underground dwellings in the North of Scotland, and illustrations are given of the underground gallery called Uamh Sgalabhad, near Mol a Deas, South Uist; a gallery at Paible, Harris; with several others.

"Quelle est la Race la Plus Ancienne de la Russie Centrale?" By Prof. Anatole Bogdanov. pp. 12. "Report of the 11th session of the International Congress of Pre-historic Archaeology and Anthropology." Moscow. 1892.

"Sanchi and its Remains." By General F. C. Maisey. (Kegan Paul, 1892.) 4to. pp. 142, with 40 plates. The object of this magnificently illustrated work is stated by the author to be (1) To place on record a full and connected description of the Sánchi memorials and to show their connection with religious systems antecedent to what is now called Buddhism. (2) To give accurate illustrations from my own hand-drawn originals of the Sánchi buildings and sculptures. (3) To invite attention to the evidence which the Sánchi remains supply, that the Buddhism of Sákya—which is usually attributed to the sixth century B.C.—was introduced, as a reform of the pre-existing semi-Mithraic faith, about the commencement of the Christian era, that is, shortly before the time when the gateway sculptures of Sánchi were executed.

"Plutarch's Romane Questions," translated A.D. 1603, by Philemon Holland, M.A., Fellow of Trinity College, Cambridge. Now again edited by Frank Byron Jevons, M.A., Classical Tutor to the University of Durham, with dissertations on Italian Cults, Myths, Taboos, Man-worship, Aryan Marriage, Sympathetic Magic and the Eating of Beans." (David Nott, 1892.) 8vo. pp. cxviii and 170. "On the whole, with the proper qualifications, Plutarch's 'Romane Questions' may fairly be said to be the earliest formal treatise written on the subject of folk-lore. The problems which Plutarch proposes for solution are mainly such as the modern science of folk-lore undertakes to solve; and though Plutarch was not the first to propound them, he was the first to make a collection and selection of them, and give them a place of their own in literature. On the other hand, though Plutarch's questions are in the spirit of modern inquiry, his answers—or rather the answers which he sets forth, for they are not always or usually his own—are conceived in a different strain. They are all built on the assumption that the customs that they are intended to explain were consciously and deliberately instituted by men who possessed

at least as much culture and wisdom as Plutarch himself, or the other philosophers who busied themselves with this branch of antiquities."

"**Further Notes on Fuegian Languages.**" By D. G. Brinton. (Proc. Amer. Philos. Soc., vol. xxx.) pp. 6.

"**Pagan Christian Overlap in the North.**" By H. Colley March, M.D. (Trans. Lanc. and Ches. Antiq. Soc., vol. ix.) pp. 41. Illustrated.

"**Language of the Mississaga Indians of Skûgog.**" By A. F. Chamberlain. (Philadelphia, MacCalla, 1892.) pp. 84. The paper, written as a thesis for the Degree of Doctor of Philosophy in Anthropology at Clark University, deals with the language, songs, tribal names, mythological characters, and bibliography of the subject.

"**The Tribute Roll of Montezuma.**" Part I. By D. G. Brinton. The Written Language of the Ancient Mexicans. (Reprinted from Trans. Amer. Philos. Soc., vol. xvii.)

"**Antropologia e Pedagogia.**" Memoria dell Dott Paolo Riccardi. Parte prima. (4to, Modena, 1892.) pp. 172.—This is the first part of an introduction to the science of education, founded on a basis of experimental psychology and anthropology. Dr. Riccardi has been occupied during the last seven or eight years in collecting, with the help of teachers, some hundred thousand observations on two thousand children of Modena and Bologna, and in this first part of his work he presents the data concerning the psychological and sociological condition of the children. The anthropometric observations are to follow in the second part, while the concluding part will deal with the more general results and conclusions. Dr. Riccardi accepts as a rough primary classification of the pupils a scholastic division into good, middling, and bad. He then proceeds to investigate the characters of these three classes, with reference to family life, number in family, healthiness of family stock, social position, &c., in each case first taking the sexes together, and then considering boys and girls separately. Italian children to a large extent live under bad conditions, and, as Pagliani and other previous investigators have shown, they are decidedly below the anthropometric standards of other nations. Dr. Riccardi's results bring out a marked contrast in every respect between the children of the poor and of the well-to-do classes, to the advantage of the latter. The investigation is an important one, and when completed will be well worthy of the author's reputation.—[H. E.]

"Proceedings of the Society of Biblical Archaeology." Vol. xiv. Part 8. Notes on Egyptian weights and measures, by F. L. Griffith.

"The Archaeological Journal." Vol. xl ix, June. Stone circles of Great Britain, by A. L. Lewis. On pre-Roman saws versus sickles, by R. Munro.

"Journal of the Royal Society of New South Wales." Vol. xxv. Some folk-songs and myths from Samoa, by Rev. G. Pratt.

"Folklore." Vol. xiii, No. 3. Queries as to Dr. Tylor's views on animism, by J. S. Stewart-Glennie. An analysis of certain Finnish origins, by Hon. R. Abercromby. Bantu customs and legends, by J. Macdonald. Celtic myth and saga, by A. Nutt. Bibliography.

"The American Anthropologist." Vol. v, No. 4. Manual concepts; a study of the influence of hand usage on culture growth, by P. H. Cushing. The "Montezuma" of the Pueblo Indians, by A. F. Bandelier. Comparative chronology, by W. J. McGee. A study in Batts and Tipps, by W. Matthews. The Panamint Indians of California, by F. V. Colville. Notes upon some geometric earthworks, with contour maps, by W. H. Holmes. Bibliography.

"Proceedings of the Society of Antiquaries of Scotland." Vol. xxv. Notes on the excavation of various cairns. Wooden objects supposed to have been otter and beaver traps, by R. Monro. Bronze ornaments, Aberdeenshire, by G. Muirhead. Rune prime staves, by H. M. F. Simpson.

"Scottish Geographical Magazine." Vol. xviii, No. 10. The tribes of Mashonaland and their origin, by J. T. Bent.

"Journal of the Ceylon Branch of the R. Asiatic Society." Vol. xi. Paddy cultivation ceremonies in the four Kórales Kégalla district, by H. C. P. Bell, with references to former papers.

"Journal of the Anthropological Society of Bombay." Vol. i, No. 8. The nasal index in biological anthropology, by Dr. G. Da Cunha. Funeral rites and ceremonies, by Kedarnath Basu. On some superstitions prevalent in Bengal, by Sarat Chandra Mittra. On vestiges of Moon-worship in Behar and Bengal, by S. C. Mittra.

"The American Antiquarian." Vol. xiv. No. 5. Village life and the mound builder's cultus, by S. D. Peet. Evolution of the human face, by A. H. Thompson. No. 6. The ruins of Southern Utah, by W. K. Moorehead. The Maya codices, by Cyrus Thomas. The borrowed myths of America, by S. D. Peet. The early religion of the Iroquois, by W. M. Beauchamp.

"*Journal of the Asiatic Society of Bombay.*" Vol. lxi, part i, No. 2. A vocabulary of the Korwa language, by W. Crooke. The Korkus, by W. H. P. Driver.

"*The Journal of the Polynesian Society.*" Vol. i, No. 1. The races of the Philippines. Genealogies and historical notes from Raratonga. Maori deities. The Tahitian "Hymn of creation." Futuna island and its people. Polynesian causatives. The Polynesian bow. No. 2. Genealogies and historical notes from Raratonga. Paqa. Stone implements from Chatham Islands. The Maori occupation of Chatham Islands. Easter Island. Easter Island inscriptions. Uea Island. Pre-historic civilisation in the Philippine Islands.

"*Transactions of the New Zealand Institute.*" Vol. xxiv. On the ancient relations between New Zealand and South America, by Dr. H. von Jhering. Vestiges, &c., of the ancient Maories, by W. Colenso. The tradition respecting the aboriginal inhabitants of Whakatane, by Col. St. John. On the working of Greenstone by the Maories, by F. R. Chapman.

"*Bulletins de la Société d'Anthropologie de Paris.*" Vol. ii. (IV ser.) Part 4. Whistling language of the Canaries. The birth-rate in France. A Gaulish burial discovered at Cernay-les-Reims. The birth-rate of Lillebonne. Ancient burial place near Monthéry (Seine and Oise). Manufacture of primitive pottery in the Canaries. Poisoned arrows from the Upper Niger. Some new prehistoric beds near Macon. Neolithic workshops in the valley of the Lunain. Vol. iii. (IV series.) Part 1. Whistling among primitive people. Part 2. Egyptian caricatures. On the best method of calculating indices. Legends and prayers in Champaigne and Brie. Neolithic workshops in the departments of Oise and Aisne.

"*Bulletin de la Société d'Anthropologie de Lyon.*" Vol. x, No. 2. The bronze age in Upper Bavaria, by Dr. Naue. Fully illustrated.

"*L'Anthropologie.*" Vol. iii, No. 4. The end of the neolithic period in Spain, by L. Siret (86 figures). The stone age in Egypt, by E. Cartailhac (26 figures). An excursion to the quaternary deposits in the department of the Nord, by M. Boule.

"*Revue Mensuelle de l'École d'Anthropologie de Paris.*" 2nd year. Part 8. The human skeleton from Gravenoire, by F. Pommerol. Part 9. Prehistoric record, by G. de Mortillet. Part 10. The evolution of the bronze axe in Italy, by A. de Mortillet. Part 11. Pre-historic chronicle.

THE MAORI POPULATION OF NEW ZEALAND ACCORDING TO THE RESULTS OF A CENSUS TAKEN IN FEBRUARY, 1891.

	Maoris.			Half-castes living as Members of Maori Tribes (included in the preceding Numbers).		
	Persons.	Males.	Females.	Persons.	Males.	Females.
North Island ..	39,535	21,725	17,810	1,997	1,125	872
Middle Island ..	1,883	973	910	542	274	268
Stewart Island ..	136	72	64	105	56	49
Chatham Islands—						
• Maoris ..	148	65	83	37	14	23
• Morioris ..	40	20	14	..	..	..
Maori wives living with European husbands ..	251	..	251	..	..	..
Totals ..	41,903	22,801	19,132	2,081	1,400	1,212

NOTE.—Besides the half-castes included in the above table, there were 2,184 half-castes (males, 1,122; females, 1,062) living with and enumerated as Europeans at the time of the census.

[Extracted from the Census Returns of the Colony of New Zealand, 1892.]

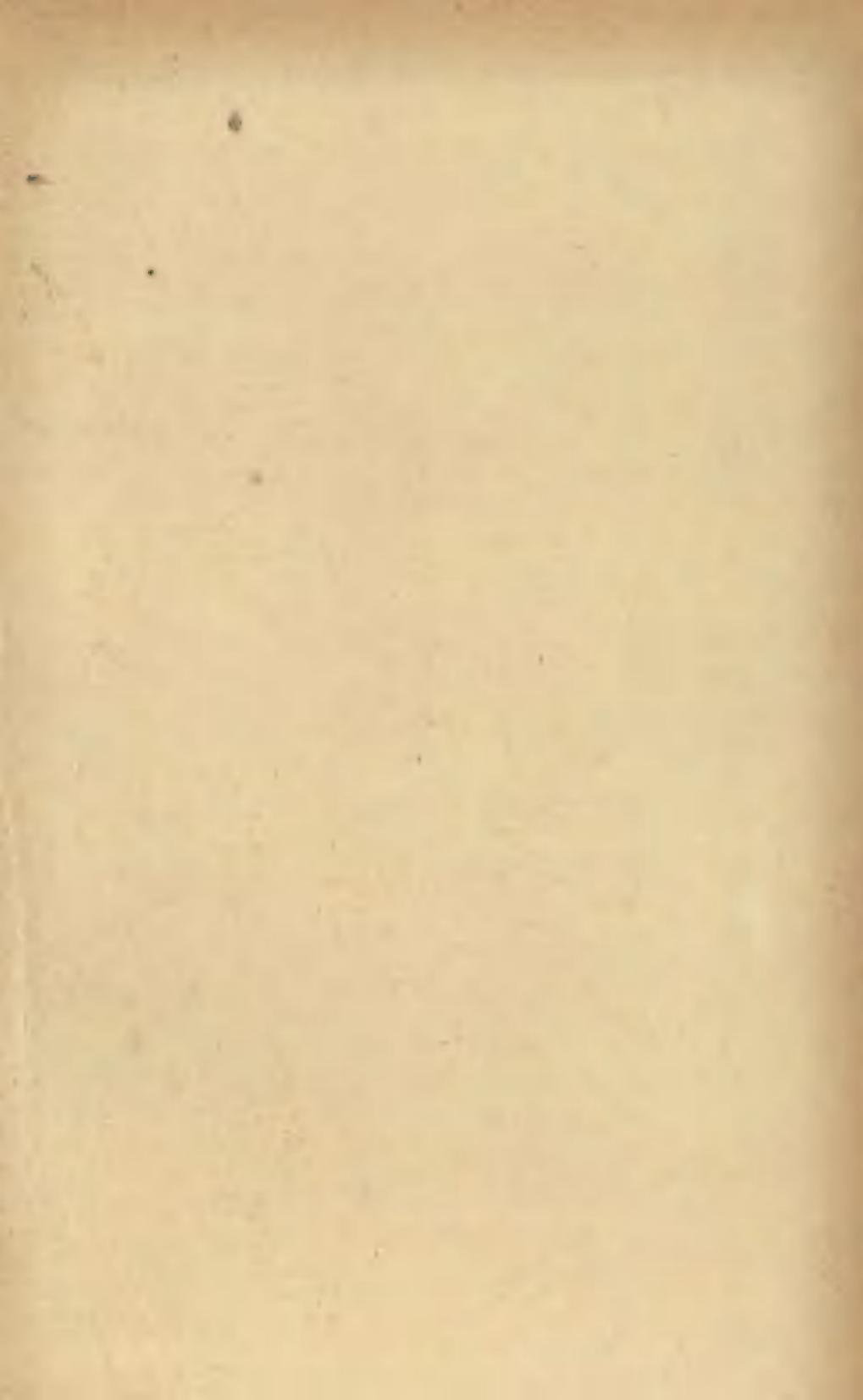






FIG. 1.—GABRIEL, THE CHILD OF A RED-SKINNED MOTHER, A WARRAU, AND
A BLACK FATHER.



FIG. 2.—A MACUSI LAD IN FULL DANCING DRESS.



THE JOURNAL
OF THE
ANTHROPOLOGICAL INSTITUTE
OF
GREAT BRITAIN AND IRELAND.

DECEMBER 13TH, 1892.

EDWARD B. TYLOR, Esq., D.C.L., F.R.S., *President, in the Chair.*

The Minutes of the last meeting were read and signed.

The following presents were announced, and thanks voted to the respective donors :—

FOR THE LIBRARY.

- From the AUTHOR.—Medium. By W. M. Flinders Petrie. 4to. London, 1892. pp. 52. Plates.
— Quelle est la race la plus ancienne de la Russie centrale? By Anatole Bogdanow. 8vo. pp. 24.
— Les races et les langues. By André Lefèvre. 8vo. Paris. 1893. pp. 304.
— The Underground Life. By David MacRitchie. 4to. Edinburgh, 1892. pp. 47. Plates.
— The Ulu, or Woman's Knife of the Eskimo. By Otis T. Mason. 8vo. pp. 6.
— Notes on the Shuswap people of British Columbia. By George M. Dawson, LL.D., F.R.S. pp. 44. Illustrated.

- From the SECRETARY OF STATE FOR THE COLONIES.—Despatches from His Honour the Administrator of British New Guinea. Nos. 22, 23, 24.
- From the TRUSTEES OF THE MELBOURNE PUBLIC LIBRARY.—South Sea Languages. By the Rev. D. MacDonald. 2 vols. 8vo. Melbourne, 1889-91. pp. 134; xxviii, 281.
- From the ACADEMIE DES SCIENCES DE CRACOVIE.—Bulletin International. 1892. No. 8.
- From the GEOLOGISTS' ASSOCIATION.—Proceedings. Vol. xii, 9-10.
- From the DEVONSHIRE ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE, LITERATURE, AND ART.—Report and Transactions. Vol. xxiv. The Devonshire Domesday. Part 9.
- From the AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.—Proceedings. Vol. xl.
- From the ESSEX FIELD CLUB.—The Essex Naturalist. Vol. vi, 10.
- From the ROYAL UNITED SERVICE INSTITUTION.—Journal. No. 177.
- From the AUSTRALIAN MUSEUM.—Records. Vol. iii, 1.
- From the EDITOR.—Nature. Nos. 1203-1205.
- Science. Nos. 508-511.
- L'Anthropologie. T. iii, 4.
- Revue Scientifique. T. I, 20-23.
- From the ÉCOLE D'ANTHROPOLOGIE DE PARIS.—Revue Mensuelle. 1892, 11.
- From the BERLINER GESELLSCHAFT FÜR ANTHROPOLOGIE, ETHNOLOGIE UND URGESCHICHTE.—Zeitschrift für Ethnologie. 1892. Heft 4.
- From the ROYAL ASIATIC SOCIETY, CEYLON BRANCH.—Journal. No. 39.
- From the ROYAL SCOTTISH GEOGRAPHICAL SOCIETY.—The Scottish Geographical Magazine. Vol. viii, 12.
- From the SOCIETÀ ITALIANA DI ANTROPOLOGIA, ETNOLOGIA, E PSICOLOGIA COMPARATA.—Archivio per l'Antropologia e la Etnologia. Vol. xxii, 2.
- From the SOCIEDADE DE GEOGRAFIA DE LISBOA.—Boletim. 10a Serie, 12; 11a Serie, 1, 2.
- From the ROYAL GEOGRAPHICAL SOCIETY.—Proceedings. Vol. xiv, 11, 12.
- From the ROYAL SOCIETY.—Proceedings. No. 316.
- From the SOCIETY OF ARTS.—Journal. Nos. 2086-2089.
- From the SOCIETY OF BIBLICAL ARCHAEOLOGY.—Proceedings. Vol. xv, 1.
- From the NIEDERLAUSITZER GESELLSCHAFT FÜR ANTHROPOLOGIE UND URGESCHICHTE.—Mittheilungen. Band ii, 6.
- From the SOCIÉTÉ IMPÉRIALE DES NATURALISTES DE MOSCOU.—Bulletin. 1892, 2.
- From the ANTHROPOLOGICAL SOCIETY OF WASHINGTON.—The American Anthropologist. Vol. v, 4.
- From the POLYNESIAN SOCIETY.—Journal. Vol. i, 3.

Mr. A. J. Evans read a Paper on "A Prehistoric Interment in the Cave of Barma Grande, near Mentone."

Mr. J. ALLEN BROWN, Dr. GARSON, and Dr. TYLOR took part in the discussion, and the Author replied.

Dr. H. COLLEY MARCH read a Paper on "Polynesian Mythography: a Symbolism of Origin and Descent."

On the PREHISTORIC INTERMENTS of the BALZI ROSSI CAVES near MENTONE and their relation to the NEOLITHIC CAVE-BURIALS of the FINALESE.¹

By ARTHUR J. EVANS, M.A., F.S.A.

ON February 7th, 1892, a fresh discovery of human skeletons associated with primitive implements and ornaments was made in one of the caves near Mentone that have already been the scene of more than one interesting discovery. The cave in which the present find was made bears the name of Barma Grande, and is one of a series of grottoes that honeycomb the sea-face of the promontory of Lower Cretaceous Limestone that rises just across the Italian frontier on the Ventimiglia side of Mentone, and which, from its red bastions, is locally known as Baoussé Roussé, in its Tuscan form as Balzi Rossi. It lies in the Commune of Grimaldi.

Earlier discoveries of human remains in these caves have already been described by M. Emile Rivière² and others, and from the bones of extinct animals found in cave-earth in which the human interments occurred M. Rivière has not hesitated to refer them to the Palæolithic Age. The same view of these discoveries has been taken by Professor Issel of Genoa, who, however, in his recent book on Liguria³ uses the word Miolithic, intending to indicate a period between the pure Palæolithic and Neolithic times. But the evidence on which a Palæolithic antiquity was claimed for one of the earlier skeletons found, now in the Natural History Museum at Paris, has not by any means met with universal acceptance.⁴

¹ An account of this find, incorporated, with additions and some slight rectifications, in the present paper, was communicated by me in April, 1892, to the "Prähistorische Blätter" of Munich (1892, No. 3: "Entdeckung von drei menschlichen Skeletten in die Höhle Barma Grande zwischen Mentone und Ventimiglia"). An excellent article on the same subject ("The Cave Men of Mentone") by Mr. A. Vaughan Jennings, F.L.S., F.G.S., to which I have had the advantage of referring in the course of this paper, appeared in "Natural Science" (June, 1892). To this must now be added another by Dr. Verneau in "Anthropologie," III (1892), p. 513, *seqq.*

² "De l'Antiquité de l'homme dans les Alpes Maritimes." Paris, 1887.

³ "Liguria Geologica e Preistorica," vol. ii, p. 265.

⁴ E.g. Boyd Dawkins: "Cave Hunting," p. 258; and *cf.* "Early Man in Britain," p. 229. G. de Mortillet: "Archéologie préhistorique," p. 390. Pengelly,

Of these earlier discoveries the most important, at any rate the most completely described, was that made by M. Rivière in 1872 in the neighbouring Barma dou Cavillou.¹ Here at a depth of 6·55 metres beneath the surface of the cave-earth, which consisted of ashes, with animal bones and small instruments of bone and flint, he discovered a human skeleton. But, as bearing on the conclusions as to the date of the cave, it is to be noted that no stalagmitic layer was encountered.

The skeleton lay on its left side in the attitude of sleep. A stone lay beneath its head and another behind the loins. An ornament composed of bored shells—which may recall the trochus-studded nets still worn by Venetian peasants—was found adhering to the skull, their adherence being due to a ferruginous substance, fragments of which lay near, and which gave a ruddy colour to the whole. Evidently this ochreous substance had been used by the departed in his life-time to paint his face and body, and the whole character of the deposit clearly points to careful interment. From the discovery of bones of extinct animals mixed with the ashes in the overlying stratum, M. Rivière concluded nevertheless that the skeleton was palaeolithic.²

But M. Rivière wholly omitted from his reports on the cave and its contents the very important results already obtained by Mr. Moggridge from the same grotto.³ Mr. Moggridge made a section of the Barma dou Cavillou when the cave was nearly intact, missing the skeleton afterwards brought to light by no more than 2 feet. He discovered "five floors formed in the earth by long continued trampling," containing near the centre in each case traces of a hearth, and, around, flint flakes and axes,

¹ "Trans. of Devonshire Ass.," 1873, p. 315, *segg.*, while admitting difficulties, was inclined to accept the Palæolithic Age of the skeleton found in the Barma dou Cavillou in 1872.

² Émile Rivière : "De l'Antiquité de l'homme dans les Alpes Maritimes," Paris, 1887, p. 127, *segg.* Cf. W. Pengelly : "The Cave Man of Mentone," "Trans. of Devonshire Ass.," 1873, p. 293, *segg.*

³ "Découverte d'une squelette humaine de l'époque paléolithique dans les cavernes de Baoussé Rousset," 1873, and *cf.* "De l'Antiquité de l'homme dans les Alpes Maritimes," p. 127, *segg.* Amongst the bones discovered were represented Ursus spelæus (numerous teeth, a few bones), Ursus arctos, Canis lupus, Canis vulpes, Mustela vulgaris, Hyaena spelæa, Felis antiqua, Felis spelæa, Felis lynx, Felis catus, Arctomys primigenia, Mus arvalis, M. muscardinus, Lepus caniculus, Rhinoceros tichorinus, Equus Caballus, Sus scrofa fossilis, Bos primigenius, Cervus alces, Cervus elaphus, Cervus Canadensis, Capra primigenia. Amongst the shells, the Oceanic and non-Mediterranean forms *Purpura lapillus* and *Littorina littorea* occurred; also *Pecten maximus* and *Cassis saburon*, which are common Atlantic forms, though very rare in the Mediterranean. Some fossil forms such as *Nummulites perforata* were found. On the mammalian remains of this Cave see Boyd Dawkins, "Cave Hunting," p. 375, note.

⁴ "Brit. Assoc. Rep.," 1871, p. 156. Cf. Boyd Dawkins : "Cave Hunting," p. 374. See too Pengelly : "Trans. of Devonshire Ass.," 1873, p. 296 *segg.*, and p. 305, note.

hammer-stones, and bones of animals. "The bones were those of animals still existing." This evidence points clearly to the conclusion that the cave was inhabited in neolithic times. As a matter of fact, in his first account of his excavations M. Rivière described a pottery whorl as having occurred in a superficial stratum,¹ and an implement of jade was also discovered. It is further to be noted that amongst the objects found in a surface layer of the innermost part of M. Rivière's "Third Cave" is a part of a polished stone axe showing traces of fire.²

The annexed diagram (Fig. 1) will give an idea of the general conformation of the cave or cleft known as the Barma Grande in which the most recent discoveries have been made. From the data that I was able to gather on the spot from quarrymen who at one time or another had taken part in its excavation, the original floor of the cave, at its mouth, over the spot, that is, where the skeletons were found, was 7·50 metres above the stratum in which they lie. But this depth only includes what has been artificially removed from the cave. There are reasons for believing that the deposit had originally been somewhat higher but that the original level of the floor had been previously lowered by natural agencies.³

As early as 1858 M. Forel, a Swiss geologist,⁴ had obtained from the superficial layer of the cave, half a yard thick, various bones and implements. The animal remains are described as those of the stag, roe, sheep, antelope (?), aurochs, horse, boar, wolf, fox, cat, rabbit, cachalot (?), and various shells (dentalium, patella, pecten, and pectunculus). Amongst the implements are

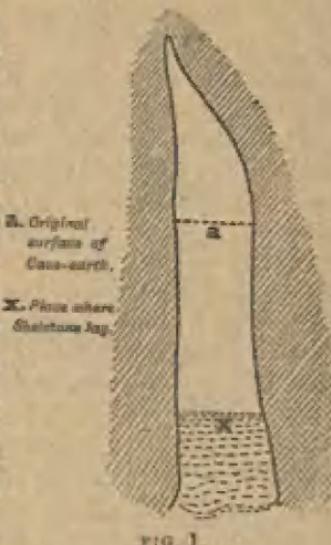


FIG. 1.

¹ In his revised account of the find, however ("De l'Antiquité de l'homme, &c.", p. 164), M. Rivière reduces this to a flat disk of dark brown stone.

² Rivière: *op. cit.*, Pl. IX, 13. In his account of Cave 3, M. Rivière omits all mention of this discovery. It is difficult for the reader to remedy this omission for the book has no index, and the provenience of the objects in the plates is in most cases not given.

³ Cf. A. V. Jennings: *op. cit.*, 272, who cites M. Forel for the fact that as early as 1858—before the excavations had begun—the floor had been lowered by natural agencies "as shown by ossiferous incrustations clinging to the walls." Professor Isel considers that the original floor was 11 metres above the skeletons.

⁴ See his "Notice sur les Instruments en Silex et les Ossements trouvés dans les Cavernes à Menton," 1860.

mentioned arrow heads, fish-hooks, spear heads, and short rough flint knives.

Between 1866 and 1886 M. Rivière, Professor Léone Orsini and others undertook a systematic excavation of the cave, and the whole contents of the outer part were eventually cleared out to about 1½ metres above the spot where the later discovery of skeletons were made. Remains of various extinct animals were found including most of the species found in the other caves.¹ The most important discovery was due, however, to non-scientific hands. In 1884 Louis Julien, the foreman of the men employed in quarrying the cliff, who had taken up the work of excavation, unearthed, at a depth of 8·40 metres,² a more or less perfect skeleton. It is described as having had a large flake of flint at the top of the head, and two others at the shoulders "like epaulettes." The skull was coated with a red ochreous substance. Above was a layer of coal and ashes amongst which were the teeth of ruminants, ox, deer, and goat, and small flakes. The skeleton lay on its back between the cave wall and a large stone, with the head towards the mouth of the cave. The skull is now in the Mentone Museum.

It is to be observed, however, that in this case, as in the lower strata of the Barma dou Cavillon, no pottery was discovered. The cave-earth and the remains in it lay in a confused mass without regular stratification, and here again no layers of stalagmite occurred.

The present discovery was made near the mouth of the cave and close to the spot where the skeleton of 1884 had been unearthed.

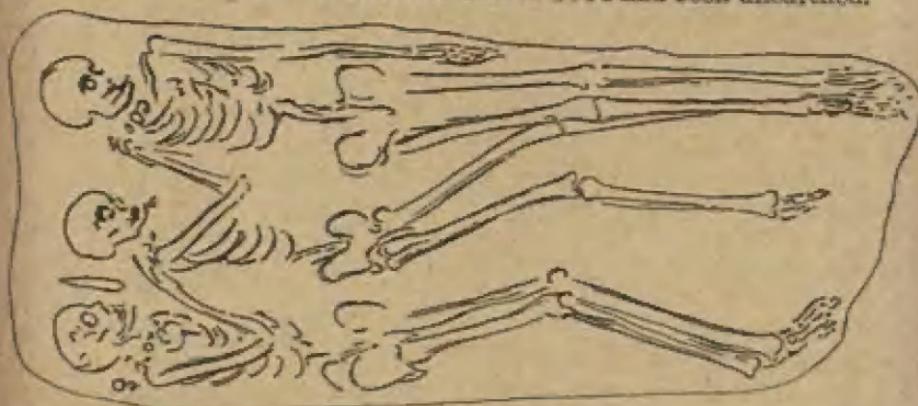


FIG. 2.

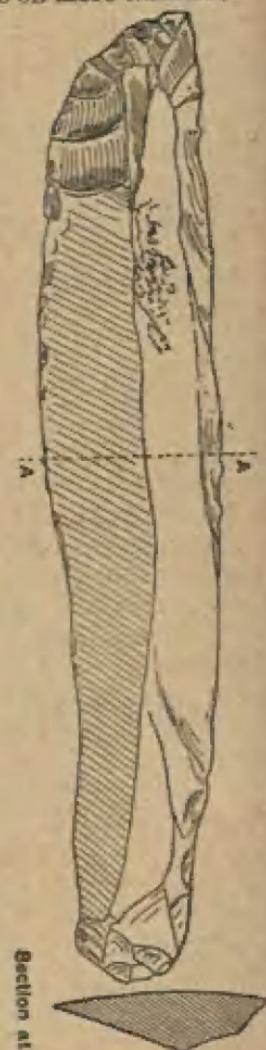
¹ M. Rivière does not give a more exact account. Incidentally he mentions a bone of *Ursus spelaeus* worked into a punch.

² See letter of Mr. Wilson, U.S. Consul at Nice, in "*L'Homme*," 1884, p. 186: the skull is reproduced by M. Rivière, *op. cit.*, p. 197. The cephalic index was 79·0, but complete measurements could not be taken.

Unfortunately, as in the former case, it was not made by a scientific excavator but by men engaged in quarrying the limestone cliff. I visited the spot shortly afterwards on more than one occasion, but the ornaments and implements had been removed by the owner of the quarry to his house, and there was some difficulty in ascertaining the exact position in which the several relics were discovered.

The subjoined sketch (Fig. 2) will give a fair notion of the position in which the bodies were found. They lay across the present mouth of the cave with their heads to the east. The outermost skeleton was that of a man apparently well on in life. Unfortunately the skull was broken with a blow of a pick at the moment of discovery, and the length of the skeleton can therefore be only approximately given. From his heel to his shoulder he measured 1.85 metres, so that he was probably at least as tall as the taller of the three adult skeletons found in 1872-1873, which reached the length, according to M. Rivière, of 2 metres. This gigantic frame was somewhat turned to the left, but it lay more on its back than the other two. By his left hand, laid close to his femur, lay a long flint knife (Fig. 3). About the neck and on the skull were remains of ornaments of teeth and bone, fish vertebrae and pierced shells, among them many *nassa nerites*, and on the legs a little below the top of the tibias were two Cypræas.¹

Immediately behind this lay a skeleton, recognised by Dr. Verneau² as that of a woman. It rested on the left side with the knees slightly drawn up, and its right hand almost resting on the giant's shoulder. It is said to have held another flint knife.³ This female skeleton was not so richly decked with ornaments as the other two, the bone and tooth pendants being wanting in this case



Section A.A.

FIG. 3.—FLINT KNIFE FOUND
WITH FIRST SKELETON.
1 linear. (23 x 5 cm.)

¹ I take this last statement from M. Rivière's short notice of the find in the *Compte-rendu de l'Académie des Sciences*, of March 7, 1892.

² "Anthropologie," III, 527.

³ A. V. Jennings, *op. cit.*, p. 274.

The third skeleton, of a youth, lay in much the same attitude as the second, with its right hand raised as if to be laid on the shoulder of the individual in front of it. Under or near its head a third flint knife was discovered (Fig. 4). Both

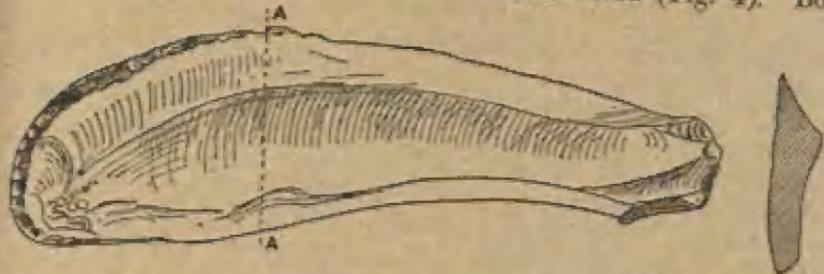


FIG. 4.—FLINT KNIFE FOUND WITH THIRD SKELETON. $\frac{1}{4}$ linear.
(Size, 17 x 5 cm.)

the two inner skeletons though of tall stature were distinctly smaller than the first discovered.

From the position in which the bodies lay it seems natural to conclude that the two smaller individuals here interred were in a position of dependence on the old giant. Amongst the objects found, chiefly, as far as I could gather, about the heads and necks of the skeletons, were remains of necklaces or head ornaments of shell and bone, amongst which may be mentioned bored shells, fish vertebrae, and teeth—apparently canines of deer—which had been much rubbed down and in some cases adorned with incised lines and nicks (Fig. 5). Of the bone ornaments dis-



FIG. 5.—DEER'S-TOOTH PENDANTS.

covered, the most remarkable were some curious objects like double eggs or acorns connected by a common stem to which I shall return. These, too, were incised in a similar manner. Amongst the bored shells found I was shown specimens of small Cypraea,¹ Cerithium, and a kind of Trochus, and a quantity of

¹ Identified by Mr. A. V. Jennings (*op. cit.*, p. 276), with *Cypraea milles-punctata*, an Atlantic species.

Nassa neritca,¹ the same shell that formed the head ornament of the skeleton excavated by M. Rivière in the Barma dou Cavillou. This correspondence is of great importance as showing that both interments belong to the same race and time. It is the more to be regretted that on my second visit to the cave and its owner, who professed to keep the smaller relics found at his house, all these and several other objects had disappeared. The owner himself had made the discovery no small source of gain by charging visitors a fee of a franc apiece. In return for this, however, he did practically nothing to protect the skeletons, which in a few weeks' time were so trodden under foot as to be almost past recognition.

Another interesting correspondence between the present discovery and that of the Barma dou Cavillou was the presence, in the earth about the skeletons, of lumps of a ferruginous substance, which in this, as in the other cave, had partly stained the bones. There can be no doubt that this had been placed with the departed that he might have the wherewithal to paint his face and body for entry into the spirit world.

On the osteological characteristics of the skeletons I cannot speak as an expert. They have, however, been examined by competent authorities, whose accounts in the main agree. The skulls were decidedly dolichocephalic. The large skull has prominent supra-orbital ridges, the smaller skull has these prominences less marked and is narrower across the frontal bones, but, still, stronger, thicker, and more definitely ridged than the Neolithic skulls of the Finalese. Professor Issel, M. Rivière, Mr. A. V. Jennings,² and more recently Dr. Verneau³ have been independently led to compare the Cro-Magnon skulls—M. Rivière especially laying stress on the curious rectangular orbits. Professor Issel, in a communication read before the Natural History

¹ This observation is corroborated by M. Rivière, who also saw these shells, and by Dr. Verneau, "Anthropologie," III, 528.

² Mr. Jennings remarks, *op. cit.*, 274, "As regards the skulls, . . . the first is of a size proportionate to the skeleton, and enough remains to show some general characters, though the left side, the jaw, and the basis craniæ are wanting. The maximum length is 21 cm., and the greatest width in the parietal region is 15 cm. The cephalic indices are therefore 71·5 and 66·5, the former very near that of the 1884 skull determined by Mr. Wilson ("Brit. Ass. Rep.," 1885, p. 1218), as 71·35, and near those of Cro-Magnon. The craniofacial angle is not easy to determine, but it seems to be approximately 90°. The larger skull is higher in the parietal region, and projects to a remarkable extent above the occipital region, so much so that it is perhaps abnormal. The smaller skull is highest in the posterior parietal region."

³ Dr. Verneau has restored what remained of the middle skull. He establishes the general resemblance of the Barma Grande skulls to those of Cro-Magnon, but observes that the forehead in this case is somewhat shorter and the skull higher—"mais malgré tout, il se rapproche tellement, par le reste, du type de la Vézère, dont il exagère même certains traits, qu'il me semble impossible de l'en isoler," *op. cit.*, p. 538.

Society of Genoa of April 4, 1892, which I had the advantage of hearing, while in favour of the Palæolithic date of the skeletons, yet came to the conclusion that though the bones were thicker, the crania and skeletons, on the whole, presented the same racial characteristics as the undoubtedly Neolithic skeletons of the caves of Finale, further along the Ligurian Coast. Speaking as a non-expert I can only say that my own impression strongly agrees with this, and that the Mentone skeletons represent the same race as those of Finale, in a somewhat more primitive stage.

In view of the strong opinions that have been expressed as to the Palæolithic age of this and the other similar interments in the caves of Balzi Rossi, the following considerations will not be out of place:—

The great depth at which the skeletons were found both in the present instance and in the other allied discoveries, the undoubted fact that bones of extinct animals were found in the cave-earth above the level of the skeletons, and the absence, except in the case of a more or less superficial find, of polished stone implements, are all facts which give a *prima facie* probability to the view that we have here to deal with remains of Palæolithic age. Another very remarkable phenomenon which distinguishes this whole group of discoveries from all hitherto known Neolithic interments is the absence of pottery. In the vast mass of deposit extracted by M. Rivière to a depth of 6·55 metres from the Barma dou Cavillou no pottery was found, nor was any noticed by Mr. Moggridge and other explorers. And this evidence becomes the more significant when it is added that in the still larger cave, the Barma Grande—with which we are dealing, in a still greater depth of deposit, no single fragment of pottery has been discovered. I myself on two different occasions have spent a considerable time hunting over the heaps of cave-earth turned out from above and around the skeletons, but was unable to find the smallest particles of earthenware.

This total absence of pottery from the present deposits becomes, moreover, still more remarkable when they are brought into comparison with the Neolithic interments of the caves of the Finale district, on the same Ligurian coast, between Albenga and Savona. In this case the deposits are in all cases associated with pottery, and the earth of these caves is full of sherds to a depth, in some cases, of 9 metres. The bones of domestic animals, moreover, are there abundant. In the Balzi Rossi group these too seem to be conspicuous by their absence.

From all this we may venture to arrive at one safe deduction.

The interments of the Barma Grande, the Barma dou Cavillou and the other grottoes of the Balzi Rossi Cliffs belong to an earlier period than the Neolithic stratum so well represented in the Finalese. All this is in perfect keeping with the osteological evidence referred to above.

But are we therefore to conclude that the Balzi Rossi remains are of Palæolithic date?

It seems to me that there are other circumstances to be considered in connexion with these latter finds, which do not admit of such a conclusion—unless, indeed, the word "Palæolithic" is to be given a sense different from its usual acceptation.

When we come to examine the views as to the extreme antiquity of the instruments, such as M. Rivière has not hesitated to put forward in the most unqualified manner, we find, in fact, a curious illustration of the danger of proving too much. The skeletons lie in all cases beneath a vast mass of cave-earth in which the remains of extinct animals are undoubtedly associated with implements of flint and bone that may justly be regarded as the work of Palæolithic man. Therefore we are told the interments themselves must belong to the same age. Long flint knives such as those discovered, may, it is true, find parallels in some of the later Palæolithic caves such as that of La Madeleine, though like implements were also in common use in Neolithic times. But the argument invoked by M. Rivière leads us to consequences far beyond this. In the cave-earth of the overlying stratum implements occurred not only of types characteristic of the Magdalenian group, of Solutré, and of Laugerie Haute and Basse, but included quartzite and other forms peculiar to the still earlier art of Le Moustier.¹ In the same way the bones of extinct animals found lead us on this showing to the conclusion that the "Man of Mentone" dated back to the days of the earliest group of pleistocene mammals.

The very fact that these different forms are mixed up together in the overlying cave-earth points clearly to partial or general disturbance. In the Barma dou Cavillou, moreover, our surprise at the great depth at which the interment occurred is considerably diminished when we find from Mr. Moggridge's observations that there had been six different floors of occupation dating from a period when the fauna was apparently confined to existing species. In the case of the Barma Grande, moreover, there is, as we have seen, distinct evidence that the floor level had once been higher and had subsequently been lowered by natural processes of denudation. But this raising

¹ See Canal de Fondouce and Cartailhac, "Matiériaux, &c.", 1873, p. 133; De Mortillet: "Arch. préistorique," p. 190. Quartzite implements of the Moustier type also occur in the grottoes of the Finalmarina district, notably the Arme delle Fate, associated with bones of *Ursus spelaeus*.

or lowering of the floor level by natural causes may have been carried on to a far greater extent than is now traceable. The jumble of bones and implements of different ages, the unstratified character of parts of the cave contents still visible—may it not at least be partly due to the past influence of flood-waters bringing down débris from interior cavities of the rock?

Making however every allowance for the operation of such causes the great depth at which these interments were found is still a phenomenon which must be taken into very serious account. It is moreover the more striking when we contrast it with the comparatively superficial character of the Neolithic graves in the caverns of the Finale district. In that case the average depth at which the skeletons lay was not more than about 50 centimetres, and though in places, owing to the accumulation of débris, it was as much as 2 metres¹ even this represents barely a quarter of the depth at which the Balzi Rossi deposits lay. The absence of pottery in this whole group of caves, of polished implements, of the bones of domesticated animals, all this, as already pointed out, shows that the men buried there were living in a distinctly more primitive stage of culture than the Neolithic folk of the Finalese. Yet the Neolithic deposits of Finale which give place by insensible gradations to those of the early metal age and to forms akin to those of the *Terramare* of the other side of the Apennines, must themselves date back well beyond the third Millennium before our era.

The race of Balzi Rossi, then, must be fairly reckoned to be earlier than these, and if the ratio of the overlying deposit is to count for anything may precede them by thousands of years.

But granting this we must not shut our eyes to the fact that the interments of the Barma Grande and the Barma dou Cavillou present us with a cult of the dead, and, as I hope to show, with certain forms of ornaments and implements which find their nearest parallels rather among Neolithic than even the latest Palaeolithic remains. Nor must it be forgotten that no bones of extinct animals have been in any case found in direct association with this group of skeletons. Several cases full of bones, found in the immediate neighbourhood of the skeletons, have now, in fact, been examined by Messieurs H. Filhol and M. Boule² and proved to belong to the following animals:—*Fox, Horse, Wild Boar, Bison Europaeus, Red and Roe Deer, Ibex*, and an uncertain ruminant. It will be seen that not a single characteristic Quaternary animal occurs in the list. It is

¹ See A. Issel, "Nuove ricerche sulle Caverne ossifere della Liguria" (Rome, 1888).

² "Anthropologie," III, 532.

to be observed moreover that the mere fact that these were interments, implying as it does previous excavation, makes the appearance of Pleistocene remains, and even Paleolithic implements at higher levels in the cave earth, of no value for determining the age of the skeletons.

The careful laying out of the dead in the attitude of sleep with his flint knife in his hand, his necklace and head ornaments, and the ochre beside him wherewith to paint his face and body in the other world—all this shows a development in religious custom which has hitherto in no single well-authenticated instance been carried back to Paleolithic times. It is characteristically "Neolithic." We may go further and say that the special forms of sepulture discovered here fit on in a suggestive way to the burial rites still practised at a later date on this same coast by the Neolithic people of the Finalese. There too we find the body laid out in the same attitude of sleep, with the legs partially drawn up, an attitude which, as distinguished from the still more contracted posture of the Northern races in primæval times, we may perhaps venture to regard as characteristic of a less severe climate, and the less habitual necessity for drawing up the legs under the shelter of whatever served them as a mantle. There too we find the same bored shells and teeth hung round the neck, and the same ferruginous substance laid beside the departed to deck his person in the Spirit World; there too flint and bone objects (some of these latter of very similar forms) were placed ready to his hand. In the caves of Balzi Rossi however the skeletons were at most propped up or pillow'd by large stones; in the Finale interments, such as those of the grotto of the Arene Candide we find in the case of the adults, stones placed round and over the skeletons so as to form a rude cist, though the children were still simply buried in the cave-earth. In these later interments moreover the polished axes and pottery placed beside the dead as well as the remains of domesticated animals attest the higher stage of culture amidst which they had lived. Still the points of similarity in the sepulchral rites practised in both groups are unmistakeable. And in view of these points of resemblance the conclusion arrived at by Professor Issel, that the Balzi Rossi skeletons, in spite of some more primitive characteristics, belong essentially to the same race as the skeletons of Finalmarina, gains additional force.

The bone implements supply us with some fresh points of relationship. The bored pendants, formed of canines of deer much worn down, found with the skeletons both in the Barma Grande and the Barma dou Cavillou are identical even to their notched decorations with ornaments of the same kind found by

Professor Issel¹ in the Caverna delle Arene Candide near Finalmarina (see Fig. 5) associated with undoubtedly Neolithic remains. Identical pendants have also been found in the Neolithic deposit of the Grotta di Sant' Elia in Sardinia.² It is to be observed that very similar deer's tooth ornaments, though without the notches, were found in the caves of La Madeleine, Laugerie Basse and Les Eyzies,³ where they are ascribed to the Reindeer Period. A stumpy bone punch also found near the Barma Grande skeletons, in the possession of Mr. A. V. Jennings, is of the same type as a bone implement from the excavations of the Neolithic deposit in the grotto of the Arene Candide.⁴ Another very close parallel is afforded by the cusped bone instrument represented in Fig. 6 which the Rev. J. E. Somer-

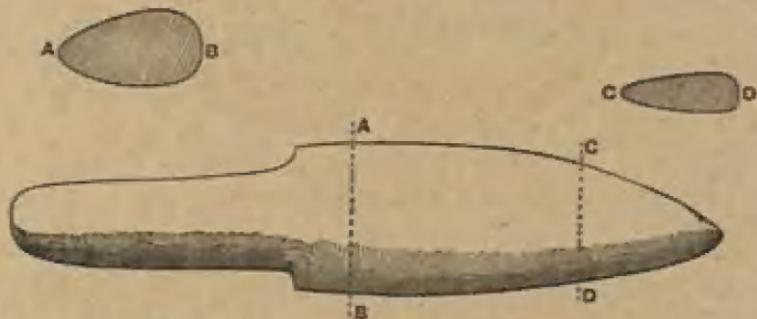


FIG. 6.—BONE ARROW-HEAD.

ville of Mentone obtained from the neighbourhood of one of the last discovered skeletons of the Barma Grande. Though blunter and thicker, it greatly resembles some of the bone heads described as "cuspidi di freccia ad alette" from the Neolithic burial place in the Arene Candide cave.⁵

Of all the bone objects, however, discovered with the present interments the most interesting are those already referred to as resembling two small eggs, or acorns, with their big ends united with a connecting stem. The bossy part of these ornaments was decorated with rows of parallel lines running up the sides like the rungs of so many ladders (Fig. 7 *a* and *b*). Seven or eight of these are said to have occurred in all,⁶ but, like other

¹ "Scavi recenti nella Caverna delle Arene Candide," Bull. di Palstra. it. Ann. xii, Tav. iv, Figs. 9, 10. One is of shell.

² In the Museo Kircheriano at Rome. They were kindly pointed out to me by Ispettore G.-A. Colini.

³ "Reliquiae Aquitanicae," B. Pl. V. 11, 12, 13, and p. 47, where they are referred to Red Deer ("Cervus elaphus").

⁴ Issel, *op. cit.*, Tav. IV. 2 *et* Tav. VI. 6.

⁵ *Op. cit.*, Tav. IV. 3; Tav. V. 7, 8.

⁶ I only saw three, and Mr. Jennings (*op. cit.* 276) the same number. He

relics found, most of them have since disappeared. The shape of different specimens varied slightly, some being more elongated than others.

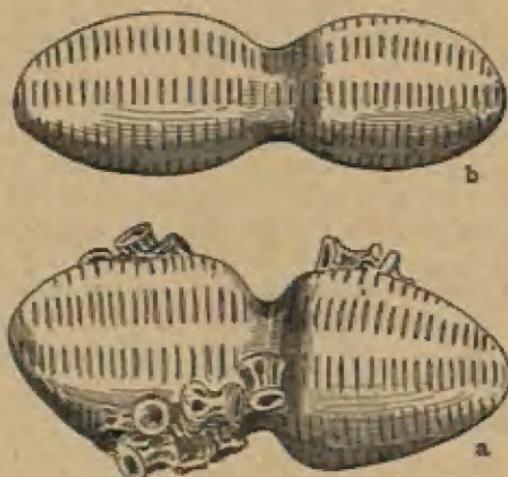


FIG. 7.—BONE ORNAMENTS.
(a) with fish-vertebrae adhering.

But what at once struck me on seeing these objects was the striking resemblance they presented to certain amber ornaments discovered with early Neolithic skeletons in the galleried tombs of Scandinavia and North Germany. In a communication to the *Prähistorische Blätter*, of Munich, on the subject of the present discovery, I have already called attention to this remarkable parallelism, and this view has since received a favourable reception in the North. My friend, Dr. Sven Söderberg,¹ Director of the Museum of Lund, has kindly sketched for me some examples in that collection, which are here figured for the sake of comparison (Fig. 8). These double-bossed objects of amber are in Scandinavia generally known as "hammer-shaped" beads,² and from their supposed resemblance to the stone-hammers of the same period, have been by many supposed to have been worn as amulets. It is, however, noteworthy that the type which presents the greatest resemblance

describes them as having been found lying on the forehead of the skeletons. It is possible, as M. Rivière has suggested, that they are of stag-horn.

¹ Dr. Söderberg writes "Die Zusammenstellung von den Knochenperlen mit den skandinavischen Bernsteinperlen mit Keulenform ist 'quite striking' und die Ähnlichkeit kann unmöglich zufällig sein. Ich bin sicher dass der Fund von solchen Perlen in Italien ein grosses Aufsehen in der gelehrten Welt erwecken wird."

² See on these especially Carl Neergaard, "Ravsmyrkerne i Steinalderen" (*Aarbøger for Nordisk Oldkyndighed*, 1888, p. 281, *seqq.*). Meissner, "Vorgeschichtliche Alterthümer aus Schleswig-Holstein," Fig. 117.

to the Scandinavian stone-hammers¹ is of later date than the others, and does not seem to occur in the chambered barrows

with an entrance gallery. The truth is that the older form does not seem to be copied from any type of stone-hammer, though it presents a close analogy to certain blunt stone implements grooved round the middle, specimens of which have been found in Britain and elsewhere, and to which the name of "sink-stones" has been given.² But in view of the existence of these earlier bone ornaments, which belong to a time when ground and polished implements of stone were perhaps unknown, it hardly seems necessary to derive the early amber forms of Scandinavia from such "sink-stones."

In addition to the above type of bone ornament with its egg-shaped ends, I saw part of another somewhat analogous specimen, of which a representation is given in Fig. 9. It will be seen that it must have originally consisted of two semi-

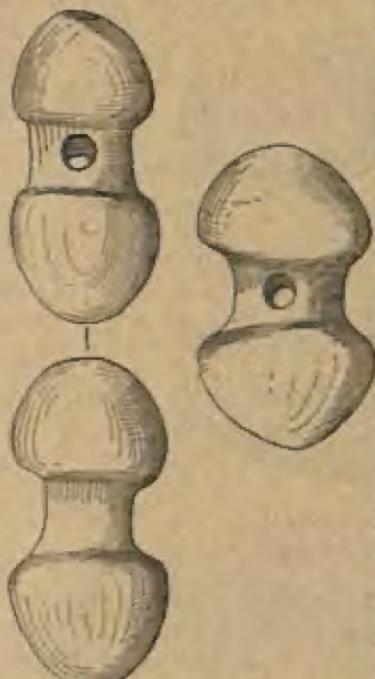


FIG. 8.—SCANDINAVIAN AMBER BEADS.

spherical bosses, flat below, and linked by a thin perforated neck. The bone in this case also is covered with the converging rows of parallel lines. Half of another example found near the skeletons is preserved in the Geological Museum at Genoa.³

This geometrical system of ornamentation seems to be foreign to the decorative system as found on bone and horn objects of



FIG. 9.—BONE ORNAMENT.

¹ This form is flatter, and the central part is cut out more at right angles. An example is given by Neergaard, *op. cit.*, p. 292. These flat types are found in a later type of Cist grave.

² In "Liguria Geologica e Preistorie," II, 263, it is figured as if entire; but this restoration is the work of the artist. Neither have I seen any like those engraved in "Anthropologie," III, 530, with the flat part complete and the striae differently arranged. Can this be also due to the draughtsman?

³ J. Evans, "Ancient Stone Implements of Great Britain," p. 211, see Fig. 159.

"the Reindeer Period."¹ On the other hand, like the bone ornaments themselves on which it occurs, it presents the closest analogy to a style of decoration very characteristic of the Stone Age in Northern Europe. Dr. Söderberg, who was struck by this, has kindly sketched for me a Danish hanging-pot of Neolithic date, the striations on which show distinct points of resemblance to the last-mentioned bone ornament from the Barma Grande (Fig. 10). The same decorative system is common to a whole series of vessels belonging to the Neolithic Period in North-West Germany and Scandinavia, where it is most frequently found on the lids. In a still more literal guise—zones and columns of parallel lines—this kind of ornament is also found on the Neolithic pottery of East and West Prussia.²

The conclusion, then, to which we are led by these converging lines of evidence is that the interments of the Barma Grande and the other caves of the Balzi Rossi cliffs, though embedded in a Palaeolithic stratum are themselves of Neolithic date. On the other hand, however, the entire absence of pottery, of polished implements, of remains of domestic animals, as compared with the Neolithic interments of the Finale Caves further up the same Ligurian coast, is on any showing a most remarkable phenomenon. A greater degree of petrification is also observable in the bone and other objects discovered. *In all probability we have here to deal with an earlier Neolithic stratum than any of which we have hitherto possessed authentic records.* If the evidence of these Balzi Rossi interments is to count for anything, it must henceforth be recognized that a race representing the essential features of the later population of the polished Stone Age was already settled on the Ligurian shores of the Mediterranean at a time when many of the civilized arts, which have hitherto been considered the original possession of Neolithic Man on his first appearance in Europe, were unknown. It will no longer be allowable to say that these supposed immigrants from Asia brought with them at their first coming certain domestic animals, and had already attained a knowledge of the potter's art, and of the polishing of stone weapons. And, if

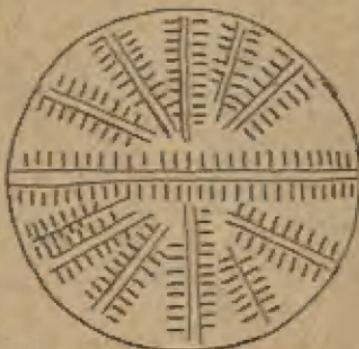


FIG. 10.—BOTTOM OF HANGING
VESSEL (1).
[Copenhagen Museum.]

¹ Rows of parallel lines or long notches are indeed known (*e.g.*, "Reliquiae Aquitanicae," B. Pl. XXV), but not arranged in regular converging columns.

² Cf. Dr. O. Tischler, "Steinzeit in Ostpreussen," p. 4 (Fig. 1), &c.

this is the case, something at least will have been done towards bridging the gap between the earlier and later Stone Age in Europe. Till such time, however, as remains of extinct animals are found in such association with human interments as to prove their contemporaneity we must still allow for a vast interval of years between the latest remains of the "Reindeer Period"¹ and interments, such as those of the Mentone Caves.

The racial characteristics of the skeletons of the Balzi Rossi,² while linking them at one end with the later Neolithic occupants of the Finalese, show that they had essentially the same physical type as the early skeletons found in Cro-Magnon Cave with very similar ornaments of bored shells and teeth. The same features occur again in the skeletons from the Neolithic grotto of the Homme Mort, in Lozère, and in some of the French dolmens, as that of Vignettes.³ The type recurs East of the Apennines and in Central Italy, Sicily and Sardinia; and the field of comparison extends to Southern Spain and the Canaries.⁴

The physical connexion with the Dolmen people derives additional interest from the comparisons established between the bone ornaments found with the Barma Grande skeletons and the amber hammer-beads of the Scandinavian Gallery Graves, and the decorative system of the pottery found in the same. It looks as if in the polished Stone Age the Neolithic settlers in the North of Europe had transferred to the new materials, such as amber and earthenware, forms and ornamentation which had already been an ancient possession of a race settled on European soil in still more primitive times.

Two shells found with the Balzi Rossi interments, *Pecten maximus*⁵ and *Cypraea millepunctata*⁶ point to Atlantic connexions. In the later Neolithic interments of the Finalese, on the other hand, which may represent the same race in a more advanced stage of development, we see new influences coming in from a very different direction. Some of the shells found with these seem to have been derived from the Southern Mediterranean,⁷ and one, the *Mitra oleacea*, found by Pro-

¹ In Liguria there seems to have been, strictly speaking, no Reindeer Period, as remains of that animal have not been found. But the bones of the Glutton and the primitive Marmot (*Aretomys primigenia*) found in the Balzi Rossi Caves point to analogous climatic conditions, and implements of the La Madeleine type are well represented.

² See specially Issel, "Nuove ricerche sulle Grotte ossifere della Liguria."

³ Issel *op. cit.*

⁴ "Liguria," &c., 250.

⁵ From the Barma d'ou Cavillon interment; Rivière, *op. cit.*

⁶ Found with the Barma Grande skeletons. See A. V. Jennings, *op. cit.*, p. 276.

⁷ See especially A. Issel, "Scavi recenti nella Grotta delle Arene Candide in Liguria," p. 210 *segg.* (Memorie della R. Acc. dei Lincei 1877-1878.)

fessor Issel in the Caverna delle Arene Candide must have made its way by some primitive line of commerce from the Indian Ocean.¹

This is not the place to develop in detail the evidence supplied by these later cave-burials of the Finalese, the more so as important monographs on this subject are being prepared by two indefatigable local excavators, Padre Amerano of Finalmarina and Padre Morelli of Genoa. The subject, however, is of such importance in relation to the earlier interments of the caves near Mentone, that I may be allowed to give a few impressions derived from such studies as I have myself been able to make of the Finale discoveries. The objects themselves are to be seen partly in the Collegio Ghiglieri at that place, partly in the Geological Museum, and in the private Collections of Don Morelli and of Signor Rossi at Genoa, and a very good example of a Neolithic skeleton with associated relics has been lately procured by Mr. Clarence Bicknell for the local Museum founded by him in Bordighera.

The racial character presented by the human remains is, as already observed, essentially the same as that of the Balzi Rossi skeletons. We have to deal with the same tall dolichocephalic race with rectangular orbits, a race which still finds its representatives among the hill-folk of Liguria. The mode of burial revealed by these excavations presents, as already noticed, distinct points of similarity to the earlier funeral cult of the Mentone Caves. The provision of red ochre, the perforated shell ornaments, the very posture of the body, and some of the bone instruments found, still betray the earlier tradition, though the pottery and polished axes, the implements of imported jadeite and obsidian, the bones of domesticated animals, the regular cist which protected the remains, all proclaim a higher grade of culture. Among the new forms of instrument here found are certain clay stamps, compared by Professor Issel with the "*Pintaderas*" with which the ancient Mexicans imprinted coloured patterns on their skins.²

Nor is it the imported shells alone that give us a clue to the direction from which the new civilizing influences were being brought to bear on the old indigenous race of this Ligurian coastland. In examining the forms of earthenware vessels

¹ So, too, Strobel discovered in the "Fondi di Capanne," Melengrina *margaritifera*, a shell derived from the Red Sea or Persian Gulf. Cf. "Bullettino di Paleontologia Italiana," III, p. 56.

² "Scavi recenti nella Caverna delle Arene Candide in Liguria," p. 130, seqq., and Tav. V, 1, 2. Similar instruments were used by the Guanches of Grande Canary. See Dr. R. Verneau "Las pintaderas de Gran Canaria," Ann. p. la Soc. Española de Hist. Nat. xii, 1883.

discovered, some very remarkable parallels suggest themselves. A peculiar form of bowl with a kind of cruciform ornament on its bottom and curves on its side which is one of the most typical objects discovered, is identical with some of the most characteristic of the clay vessels found in the *Terremare* of the other side of the Apennines, notably that of Castione, near Parma, described by Strobel, where remains of the very baskets were found from which these clay forms seem to have originated. It will be seen from this that the attempt of some Italian archaeologists to draw a hard and fast line between the culture revealed in the *Terremare* of the Po Valley and that of the more Westerly region is hardly borne out by these discoveries in the Finale Caves. It is, indeed, evident that the bulk of the remains in the Finalese Caves belongs to an earlier period than those of the *Terremare*, and rather represent the antecedent stage of Neolithic and "Æneolithic" culture out of which they grew. It is also true that certain ceramic developments which characterize these latter settlements, such as the semilunar handles, and several types of implements of bronze and bone, have not as yet been found on the Ligurian side. But a stage of culture closely allied to that of the *Terremare* is unquestionably to be found in the later strata of the Finalese Caves. Certain forms of handle, moreover, occur from which the semilunar type might easily develop itself: the horned handle (*ansa a cornetti*) has now actually come to light, and, in view of the identity of some of the most characteristic of the ceramic forms as well as of certain types of implements, we may reasonably expect to find the field of comparison enlarged by fresh discoveries. The forms referred to are not, like the earlier types, found in association with skeleton interments, and there is nothing to prove that cremation was not at this time already making good its hold on this side of the Apennines. It is even possible that remains of primitive habitations may be brought to light in the Ligurian coastlands as closely resembling the structure of the pile settlements of Lombardy and the Emilia as the clay vessels found resemble those of Castione and other Transapennine stations.

Other Italian comparisons evoked by these discoveries take us still further afield. The Neolithic remains from the Sardinian Caves display a decided parallelism. Certain forms of vessels like double or reversible cups suggest that we have here the prototypes of the highly developed double or pedestalled cup, found in the early Sicilian cemeteries of Mykénear Age, on which so much light has recently been thrown by the researches of Dr. Paolo Orsi. In the case of some fragments of primitive painted pottery we have, I venture to believe, a sister

fabric to the early painted vessels of the Sikel tombs, and to a kindred ware found in the old Iapygian country about Taranto. Nor, when we remember the historic evidence that the Sikels themselves migrated from the Italian mainland and had at one time occupied large tracts of Central Italy as far as Southern Etruria and Liguria itself, is there any *a priori* reason for doubting these comparisons.

Another favourite thesis of Professor Pigorini and others that the Ligurian Stone Age was prolonged to the time of the Roman Conquest¹ seems to me to be wholly at variance with the evidence now before us. For, in the Finale Caves, notably that of the Pollera, a progressive culture may be observed in successive layers, and, though metal objects are rare, there is distinct evidence that the deposits continued into the early metal age. The vessels of the Castione type themselves betray contemporaneity of date. Bronze dagger-blades have been found of a type that occurs in the *Terremare* and a curious cruciform ornament of thin bronze plate, while distantly recalling some of the gold quatre-foils of Mykénæ, presents a somewhat close analogy to the plates of certain types of spiral fibulae belonging to the late Bronze or earliest Iron Age in Southern Italy. A variety of comparisons lead us to the conclusion that the latest of these interments does not go down much beyond the close of the second Millennium before our era.

If in Roman times the caves were again partially used, either for habitation or interment, the fact ought certainly not to be adduced as a proof that the Ligurian Stone Age goes down to

¹ This is repeated in the most unqualified form by Professor L. Pigorini, in one of his most recent publications ("I primitivi abitatori della Valle del Po," Rome, 1892).—"Solo tra le Alpi orientali e su quelle occidentali non penetrava la luce. Cadeva la Repubblica Romana e nel cuore della Liguria erano ancora Caverne-coli colle arti e col costumi della pura età neolitica." Much stress has been laid by certain writers on a passage of Diodóros V, 49, who speaks of some of the Alpine Ligurians as sleeping in caves, which is no more than what many shepherds in this and other parts of Italy do still when tending their summer pastures. But the writers who lay such stress on this, omit some other still more pertinent facts recorded by Diodóros about the Ligurians. He expresses admiration at the industrious way in which they cultivated their rocky soil, and overcame all natural obstacles. He notices that their shields approached the Gallic in character, which indicates a high grade of metallurgic industry. Their brassen shields indeed seem to have so impressed observers that on the strength of them, according to Strabo (lib. iv.) a Greek origin was claimed by some for the Ligurians. Their national armament was at least so effective as to render their services valuable to the Carthaginians and the Sicilian tyrants, who largely employed them as mercenaries along with Etruscans and Campanians. By the end of the first century B.C., when Diodóros wrote, they were giving up their national arms for the Roman. From Strabo (lib. iv.), whose account is probably based on Posidonio, we learn that they imported oil and wine, but that a certain amount of wine of the quality of the modern Greek retsina was made in the country. Ligurian tunics and cloaks (*saga*) were known to commerce and Genoa a thriving market.

that date. One of the best results obtained in the domain of prehistoric archaeology is that there was a constant tendency for civilization at least in North-Western, Central, and South-Eastern Europe, to find a common level, and that, for instance, as Montelius has shown, the difference between the Bronze Age chronology of Italy and Scandinavia is not considerable.¹ But to suppose that the old population of these Ligurian coastlands, possessed not of rugged mountain ranges only but of valleys of surpassing richness, and ports and suitable landing-places for primitive navigation—living themselves within sight of the Tuscan hills beyond the gulf—should, as far as regards the essentials of culture, have remained over a thousand years behind the inhabitants of Scandinavian fiords, passes the limits of credibility.

The associated relics discovered in the more recent interments of the Finale Caves shows, on the contrary, that the prehistoric inhabitants of this Ligurian coast possessed a form of culture which must be regarded as a collateral branch of that Italic Class represented by the contemporary dwellers in the Po Valley, offshoots of which were thrown out in other directions as far as Sicily and Sardinia. The Eastern extension of the same primitive civilization, which here touched the Mediterranean shore, may in fact be traced through North Italy and Switzerland—where we see it in the Lake Dwellings—in a closely allied form eastwards to the similar settlements about Laibach in Carniola, to the Danubian Valley, and still further afield through the old Thracian and Illyrian regions of the Balkan Peninsula to Greece on the one hand, and on the other to the North-Western coast of Asia Minor. It is a remarkable fact that owl-like human figures, the counterpart of those discovered by Dr. Schliemann in the Troad,—and at the same time perhaps the nearest existing prototypes of those of Mykēne,—have come to light in the Finale Caves.²

This wide diffusion of kindred forms of culture may well have been the gradual result of the opening up by intertribal barter of primitive lines of commerce, in the case of Liguria no doubt partly maritime, and does not necessarily imply wholesale migration and displacement of the pre-existing European populations. On the contrary, as has been already pointed

¹ Cf. Montelius: "Om Tidsbestämning inom Bronzåldern."

² Two examples from the collection of Don Morelli have now been published in Prof. Issel's "Liguria Geologica e Preistorica," Tav. xxviii, Figs. 11 and 14. A recent examination of these primitive "idols" has revealed to me the fact that one of them (op. cit. Tav. xxviii, Fig. 14) was painted in the same style as the early pottery,—a faint rose ground colour with a brown band. This affords another and very interesting link to the Mykēnean figures. But the Ligurian example is far older.

out, the comparison that we have been able to institute between the early Neolithic folk whose remains have been brought to light in the Balzi Rossi Caves—the so-called "Man of Mentone"—and the later interments of the Finale group clearly point to continuity of race.

POLYNESIAN ORNAMENT a MYTHOGRAPHY ; or, a SYMBOLISM of
ORIGIN and DESCENT.

By H. COLLEY MARCH, M.D., F.S.A.

[WITH PLATES XX-XXIII.]

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Pacific," 1891.

IN a Paper read by the present writer to the Lancashire and Cheshire and Antiquarian Society, in February, 1889, on "The Meaning of Ornament," it was maintained that "Zoomorphs took their place in the expectant mind by virtue of some symbolic or mythological meaning, and when this was lost, animal forms were reproduced by the artificer with less attention to detail, and only to satisfy a vague desire for something mystical or auspicious."

But one of the principal purposes of that Paper was to show how the animal form passed into ornament under the control and determination of a pre-existent "skeuomorph" or structure-form, although different "skeuomorphs" became dominant at different times and among different nations.

It was further noticed that "the effect of the tool was best seen in savage ornamentation where decorative motives had been transferred, for example, to clubs and paddles. The limited power of the stone implement, no less than the grain and hardness of the wood, greatly modified the 'skeuomorphs'

of binding, of wattlework, and of weaving, and controlled also, in large measure, the way in which the tribal zoomorph ultimately broke up." And it was pointed out that in many of those cases "though the eye tended to remain as a concentric ring, and the tongue persisted as a curious ovoid, the limbs were changed into a number of semilunes or synclinal curves, easily to be distinguished from pre-existent structure-forms."

Dr. Stolpe has since demonstrated, with the utmost conclusiveness, how, on paddles and axes from the Hervey Islands, the human figure is transformed into a zigzag; though he does not recognise the fact that the transformation is brought to its final stage under the influence of a paramount "skenomorph."

I now propose to discuss, on similar lines, and in close relation to Dr. Stolpe's essay, the zoomorphic ornamentation of the Pacific Islands and of Mangaia in particular.

The Tongans, says Surgeon Anderson, one of Captain Cook's following (Edition 1790, p. 1639) "constantly refer pain from grief, anxiety, and other affections, to the bowels." When animals were inspected for augury it was the convulsive movements of the intestines that gave the desired indication to the Tahitians (p. 1540).

The primary meaning of the word *manava* is "belly" (Davies, Pratt, W. Williams) and "womb" (Pratt), but as these regions were regarded as the seat of life and feeling, the word acquired a corresponding secondary sense and signified also "the interior man" (Davies) and "the breath" or spirit (W. Williams). "*Manava*!" was shouted as a greeting to the Areois who were famous for their licentious practices. An intoxicating drink was prepared from *kava*, a root called in Polynesian mythology *Teroo* (Gill's "Myths," &c., p. 161), and in the Drama of Ngaru we read *Akiakia tute kava, te manava ia Teroo*, "strip the branches off the kava-tree, thy senses to stupefy." Williams, the missionary, speaks of "a string of small pieces of polished pearl-shells, which were said to be the *manava* or soul of the god" (Edition 1838, p. 99); the epithet *te manava roa*, literally "the big belly," signifies "the long lived" (Gill's "Myths," p. 128); whilst, with the causative prefix, *ta-manava*, "to be bellied," means to be heavy with sleep (Davies). *Opu*, another word for belly, is also used to designate "the mind" (Davies), and *opu tii* signifies "a very large belly like that of the *tii* or *tiki* which was always made large" (Davies).

The first symbol to be noticed, then, is that of abdominal protuberance, the hands usually resting upon it, which represents the soul and stands for the immortality or rather the longevity of the gods and of the early ancestors of man. (Fig. 6.)

For recently deceased persons there was another symbol. Mr. Charles Read in a Paper published in the Journal of this

Institute (November, 1891) refers to "Ellis, II, p. 217, where a figure of an *Altar and Uus* is given," and adds, "I cannot find any account of the *Uus* in the text, though they should be figures of gods." Williams says that the *uus* are "sacred pieces of carved wood by which the marae was decorated" (p. 152). Cook speaks of them as "pieces of carved wood in which their gods were supposed to reside occasionally" (p. 1542). Indeed, Ellis himself (1st Edition II, 214; 2nd Edition I, 348), says, "the *uus* are curiously carved pieces of wood, marking the sacred places of interment, and emblematical of *tis*, *tikis*, or spirits"; whilst Davies gives, as the meaning of *uu*, "a piece of carved wood put up in the marae on sacrificing a man."

It appears that the act of death was called *unuhi te varua e te atua*, "the voice (or spirit) drawn out by the god." *Hi* is "to gush out" like water or blood, and *unahi* is "to draw something out of its case" as a knife from its sheath or a sword from its scabbard; or, as we might say, a fruit from its husk or a jewel from its casket. In the New Zealand tongue *uu* is "to pull out," passive *unahia* (W. Williams).

As soon as the human spirit was drawn out through the head of the body, it was carried off by *oromatuas*, who were always in wait to receive it, in order that it might be eaten by the gods. It was believed that a spirit that had been thus eaten and had passed through the intestines of the gods three times, became deified or imperishable (2nd Ellis I, 397); but the process was not regarded with pleasurable anticipation. The word *ore* is "to grate the taro," to prepare food; a final *a* is intensive, and *oreo* is "a feast"; *orohea* is "a glutton," one who makes himself ill with eating; *hea-oromatua* is "a sickness caused by an *oromatua*." *Mata* or *mata* is "a parent" or ancestor; *ai-mata* is "to eat with old men"; the intensive *matautua* is "ancient," especially in relation to lineage. Thus *oromatuas* are ancestral spirits who prepare food for the gods. Ellis (I, 334) and Davies (p. 100) call them the ghosts of dead relatives. Gill ("Jottings," p. 64) speaks of the marae of Timatera, "the whisker away," who loved to steal men, women, and children.

The *uu* was the symbol of a man whose spirit had been drawn out of his body, and the holes at the top of it probably represent the openings through which this abstraction was made. *Maa* means "cleft," and *uu-maa* is "the *uu* before a marae that has branches or divisions." Most of the *uus* figured by Cook answer to this description. They were set up in the marae, a sepulchral enclosure, together with prepared skulls, in order to deceive and attract predatory ghosts, and keep them from seeking fresh victims; and the skulls thus employed went by the same designation, *oromatuas* (Davies). Ellis says (I, 363)

"the *oromatus* were considered the most malignant of beings; they were not confined to the skulls of departed warriors, or to the images made for them, but occasionally resorted to sea-shells, and the murmur perceived on applying the valve to the ear was imagined to proceed from the demon it contained." I have ascertained that a skull will "sing in the wind"; and we cannot doubt that a strong current of air would whistle through the openings of the *uuu*.

Ellis classes the *oromatus* with *tii* or *tiki* (I, 334). He says, too, that a departed spirit was believed to be sent for or *fetched* by the gods. And Gill declares ("Myths," p. 181) that when a person dies his spirit is said to be fetched, and that "fetched" is the meaning of the word *tiki*, as it also is in New Zealand (W. Williams). Guided by this clue we may thread our way through much confusion. *Tikis* or *tii*s were spirits or demons, but they were ancestral spirits. And it is obvious that the first ancestral spirit must have belonged to the first man, and that his wife was the first woman. *Tii*, says Ellis (I, 111) "was the first man made by the gods. His wife was sometimes called Tii and sometimes Hina [the moon]. When they died their spirits were supposed to survive and so the term *tii* came to be applied generally to the spirits of the departed." But it cannot be doubtful that the mental process in the construction of the legend was exactly the reverse, and that the story itself is eponymic.

In New Zealand *Tiki* was a protecting genius, a kind of household god, and he was usually represented with hands, composed of three fingers, resting upon a protuberant abdomen. Cook says (Edition 1784, I, 162) of the New Zealanders that "they carve pieces of their green-stone, rudely shaped as human figures, which they ornament with bright eyes of pearl-shell and hang them about their necks as memorials [after the death] of those whom they held most dear." In the Society Islands "a *tii* or carved image, fixed on a high pedestal, marked the boundary of the king's territory" (Ellis III, 106); and similar figures were often placed on the lofty sterns of the canoes (Ellis I, 153). Such a vessel was called *caa-tii* (*Ibid.* p. 154). "A log of wood on which were carved *Tiki* images on its whole length, and which was set up as the guardian of the *tapu*, was called *Po-tuarua*" (Davies); from *po* the under-world, and *tuarua*, "a piece of wood on the ridge of a native house," with the intensive *a*. Though not a god-originator, *Tiki* reigned in *Po* or *Avaiki*, the under-world, the land of shadows, the road to which lay through a gloomy cavern in the centre of Mangaia known as *Tiki's Chasm* (Gill's "Myths," p. 18). "He sits at the threshold of a long house with reed sides" (*Ibid.* p. 170). Warrior spirits were sent *aere kia Tiki*, "to join *Tiki*," the first

man who died a warrior's death. But on Mangaia, continues Gill, "Tiki is a woman, the first who died a natural [or woman's] death." In a dirge recited by the same author ("Myths," p. 281) some bereaved parents who grieve for the death of their first-born recall the story of Tiki as they clothe themselves in the habiliments of woe.

At Rarotonga it was customary to offer parts of a hog, or other food, to Tiki who thus propitiated admitted souls within his dwelling (Gill, "Myths," p. 170). After such an offering the deceased was told "Go, there is *momoe o*, thine admission fee; with that seek an entrance into the abode of Tiki" (Williams, p. 478).

The word in its reduplicate form *tiki-tiki*, indicates ancestry in the sense of pedigree, as shown (Grey's "Polynesian Mythology," pp. 17, 18) in the legend of Maui, who desired to find out where Taranga, his mother or ancestress, lived. When she denied him, he reminded her "I was thrown by you into the foam of the surf, after you had wrapped me up in a tuft of your hair, which you had cut off for that purpose." Then his mother acknowledged her child and said "your name shall be Maui-tiki-tiki-a-Taranga." For this reason *tiki-tiki* sometimes signifies a top-knot. The more definite term for ancestors, *tiki-tiki tangata*, also gave rise to an eponymic legend. *Tangata* or *taata* is a generic name for man. We are told (Ellis, I, 113) that Taaroa's, or Tangaroa's, son, Tii-maaraatai [*mao* food, *rma* sacred, *tai* sea] and daughter Hina begat Tiki and Hina-ereeremonoi [*ereere* swarthy, *monoi* fragrant], and these begat a son called Taata or Tangata. Thus we have a son Tiki, a grandson Tiki, and a great-grandson Tangata, or *Tiki-tiki-tangata*.

As might be supposed, the *tikis*, as ancestral spirits or demons, were especially mischievous in the dark, and the festival of Tiki the great ancestor was held at night. A Polynesian chorus thus concludes (Gill's "Myths," p. 50),

" Day is at hand,
 'Tis dawn,
 The fate of Tiki is over,
 We part!"

The word *ata* means "a shadow"; and the clouds of early morning, that vanish before the rising sun, were called *ata-tii-tii* (Davies).

What are the Polynesian legends of origin?

1. There is abundant evidence of an ancient totemism. *Vari*, a word which means ooze or earth, originated Vātea who was half man and half fish (Gill, p. 3).

The New Zealand Tangaroa begat Punga, and he begat Ika-tere, the father of fishes, and Tu-te-wehi-wehi, the father of reptiles (Grey, p. 7). The Great Spirit, or Influence,

"Man-a-ia," had the similitude of a bird ; and in Easter Island "Mekemeke," the Great Spirit of the Sea, had a like form.

Every Samoan chief of note had his *etu*. This was some species of bird, fish, or reptile, in which the spirit of the god was supposed to reside. To eat this *etu* was the highest act of desecration (Williams, p. 373).

Williams says (p. 427) that vampire bats abound in the Samoan islands, and in Mangaia, and were venerated by the Samoans as *etus*. But Pratt calls them "fruit bats," *Pteropus Samoensis*, and says their native name is *pea*, which is also a title of nobility. They have large ears.

Fourteen genera of lizards are found in Polynesia. Some of them have oval eyes, or orbits, and in others the eyes are quite circular. A Papuan variety has five toes but only four fingers, and the crocodile of Oceania has only four toes. Väten's third offspring was Tongaiti, whose visible form was the white and black-spotted lizard (Gill, p. 10). The lizard-god Mataraū had his marae at Aumoana, Tamarua (Gill, p. 291). The lizard-god Teipe was worshipped at Mangaia (p. 307), and a special song was chanted by his altar-tribe. In Mārua, the land of shades, lived Ngaru's grandfather, or ancestor, who was no other than Moko, the Great Lizard, the king of all lizards (Gill, p. 225). As the Greek sculptor endowed his Fawn with a pointed ear, or with the neck-glands of a goat, so the Polynesian artist gave to his Divinity a bat-like auricle, reptilian eyes, and the toes and fingers of a lizard.

In one of its aspects, totemism is a doctrine of descent ; the divine ancestor is bestial. But origin was also claimed from anthropomorphic gods ; and the primal fecundity was regarded as having occurred either unisexually by gemmation, or bisexually by generation. All things proceeded from the gods in one of these two ways.

2. The epicene process of gemmation, although not unknown in other mythologies, was, among the Polynesians, a favourite mode of accounting for the origin of men and things. The principal terms, says Gill (p. 21), used by the ancient sages in speaking of genesis, are *rari*, which means ooze, and *pua* which means a bud. Grammatically, these are both feminine words.

In his description of the chestnut of the Pacific, Gill observes ("Jottings," p. 195), "the fruit hangs singly, or in clusters, from slender twigs ; but occasionally *from the trunk itself*, which is supposed to be a special mark of divine favour."

Inside the effigy of Tangaroa, "the supreme sustainer," the great national god of the Hervey Group, the creator of all things, "was found a multitude of small gods" (Williams, p. 93). Besides, he is usually represented as a virile figure, covered all over, head, trunk, and limbs, with small images of human beings (Ellis, I, 355).

Cook (pp. 83, 576) speaks of a wicker-work figure in Tahiti, "near seven feet in height, covered with black and white feathers: white where the skin should appear, and black in those parts which it is the custom to paint or stain, or where it represented hair. On the head were four protuberances, three in front and one behind, called *taata iti*, or little men. The image was an *Atua*," or god.

A more elaborate account (Gill) gives the parents of Tangaroa a similar origin. Vari, "the very beginning," ooze or mud, was anxious for progeny, and plucked off a bit of her right side, and it became Vatea who by his union with his sister Tu-metua, or Tu-papa, also a bud from Vari, became the father of Tangaroa, Rongo, and Tane. But according to another myth (Gill, p. 10) Tangaroa himself came right up through his mother's head.

It is necessary to glance at similar mythologies. We read in the *Kalevala* (Translation by Léonzon le Due, Paris, p. 436), the Epic of the Fins, this invocation: "O adorable Kave, Nature's daughter, Lady of beauty and of wealth, the most ancient of wives, the first of those mothers who are born of themselves!"

We recall the birth of Athena, who sprang fully armed from the head of Zeus. On vase-paintings Hephaistos is usually represented as starting aside with amazement, after he has cleft the head of the supreme god. But on vases of the old style, Zeus, in the presence of the celestial court, is seen in the act of parturition, with the assistance of two Eileithyias or mid-wives.

The masculine Loki, the Norse god of evil, is spoken of as "growing heavy with a female child" ("Corp. Boreale," I, 232)

In Hebrew mythology Eve is produced from Adam by gemination. He then unites himself with his own daughter, and their progeny, brothers and sisters, intermarry (*Genesis ii, 22, 23*).

Professor Sayce remarks that a passage in one of the early magical texts of Babylonia goes to show that the Babylonians also believed that woman was produced from man ("Records of the Past," I, 131). The passage is this: "The woman from the loins of the man the spirits bring forth; the child from the knees of the man they cause to issue" ("Hibbert Lectures," 1887, p. 451).

The ancient idea of epicene fecundity may be dimly seen even in the religion of Europe. "Pater ingenitus, quia a nullo est genitus; Filius eo quod a patre est genitus; Spiritus Sanctus nec genitus nec ingenitus, sed ex Patre et Filio, ex utroque procedens est" (Theodulf's "Commentary on the Athanasian Creed," Cent viii).

From all this it would appear that the position of the hands in the Polynesian symbol of divinity, resting, as they usually

do, upon a protuberant abdomen, whether feminine or masculine, may indicate more than the longer life, the larger soul of a god; they may point also to lives that have been and that are to come. And the same attitude, so frequent in Oceania, occurs also in the early statuettes of the Chaldaean goddess of fertility (Perrot et Chipiez, "Phoenicia and Cyprus," I, 219, fig. 150; II, 154, fig. 104).

To a simple people, possessed of such a mythology, no other symbolism was possible, and it demands all the reverence that we owe to religion. Even the winds have names in which the word *anau*, "give birth to," several times occurs (Gill, "Myths," p. 321). Thus, the North wind veering towards the West, gives birth to the North-by-West. And in many of the New Zealand representations of supreme divinity, we see issuing from their loins, not human figures only, but instruments of war and the chase, for these also came from the gods.

3. In New Zealand, too, is found the best example of the bisexual doctrine of origin. Rangi and Papa, or Heaven and Earth, originated all things. But a time came when they had to be "rent apart." This was long ago, for it was a common saying that "the like has never been seen before since Rangi and Papa were torn asunder" (Grey, p. 31). Tangaroa tried in vain to separate them, and To-matauenga also failed, but Tane-mahuta, the god and father of forests, birds, and insects, succeeded. Then Rangi and Papa shrieked, "Why do you rend your parents apart?" No sooner was heaven rent from earth than multitudes of human beings were discovered whom they had begotten, and who had hitherto lain concealed between the bodies of Rangi and Papa (Grey, p. 14). But though separated their mutual love continues, for the myriad rain-drops are their tears.

The sculptured representation of this creation-myth, not infrequently met with on the sacred "feather-boxes" of chiefs, must be regarded with the utmost respect. One such receptacle is called "Paparaakuara," and another is said to be that of "Te Rangihaiata" (British Museum).

Professor Sayce considers that the Egyptian *cruis ansata*, the symbol of life, is a picture of the loin-girdle. Gill tells us ("Myths," p. 35) that a common name for a god is *tatua manava* or "loin-belt." That this girdle was originally made of native cloth is shown by the fact that both in the Sandwich Islands (Ellis, I, 179), and in the Society Islands (Cook, p. 760, and Davies, *sub rote*) the word *tapa* means "the groin." The symbolic employment of *tapa* in Polynesian religion was universal. Gill refers ("Myths," p. 33) to the worship of what he calls "phallic stones." Cook translates *tootoone* "stones such as stand upright before the huts" (*tutuna*, to be high above the rest, Pratt; *tu* to stand erect, *nz* the first, Davies).

"In this morai," says Cook, referring to Tahiti (p. 1542), "we saw several reliques scattered about, such as small stones raised in various parts of the pavement, some *with bits of cloth fastened round them, and others entirely covered with it* . . . and here was laid the bundle supposed to contain the god Ooro." Williams (p. 152) mentions that "four great idols were disrobed of the cloth in which they were enveloped." Ellis (I, 335) observes that the *tii* who were "anointed with fragrant oil and kept wrapped in the choicest kinds of cloth" were brought out "every three moons." At this *pae atua*, or general exhibition of the gods, their coverings were removed, they were *meheo*, "exposed to the sun," re-anointed with oil, and returned to their wrappings.

As symbolic coverings, both matting and sinnet seem to have been equivalent to tapa. Williams speaking of Savaii says (p. 375) "Papo the god of war, who was always attached to the leader's canoe when he went forth to battle, was nothing more than a piece of old rotten *matting about 3 yards long and 4 inches in width*. It is now in the Museum." Ellis says "the idols were either rough unpolished logs of the aito tree, wrapped in sacred cloth, rudely carved wooden images, or shapeless pieces *covered with curiously netted sinnet*" (I, p. 337). Some were 6 or 8 feet long and some not more than as many inches.

As regards Mangaia, we learn from Gill that "the principal gods were simply pieces of iron-wood roughly carved into the human shape and well wrapped in native cloth" ("Myths," p. 107); that one god named Mokoiro, grandson of Rongo (p. 16) "was made entirely of sinnet" ("Jottings," p. 206); that the extremity of a great cocoa-nut leaf, when cut off and bound with a bit of yellow sinnet by the priest, constituted the fisherman's god; and that without this Mokoiro, as the divinity was called, no canoe would venture over the reef to fish" ("Myths," p. 79).

The Tahitian word for sinnet is *aha*. The first enemy slain in battle was called *aha* because a piece of sinnet was tied to him, and he was taken to a marae and prayers were made over him for further success. These ceremonies were called *aha taata*. When a pig was devoted to a god a piece of sinnet was put into its ear. A worker of enchantments was called *nanati aha*, a sinnet tier. It was the custom for a fleet of canoes to present a piece of sinnet at the marae as an acknowledgment of the protection of the gods (Davies, *sub vocibus*). Perhaps it ought to be noticed, here, that the chief marriage ceremony in the Sandwich Islands consisted in the bridegroom's casting a piece of tapa over the bride, in the presence of her parents (Ellis, IV, 435).

All nations think themselves descended from the gods. The Hebrews possess a complete pedigree from Adam who was fashioned in clay and inspired with a soul by Yahveh; and the

Teutonic races, by an unbroken family tree, proved that they were the genetic offspring of Woden. Cook, speaking of Tahiti (p. 560) says "there is perhaps no nation where the pride of ancestry is carried to a greater height." Recent discoveries at Easter Island have made it clear that multitudes of wooden documents, covered with inscriptions, are elaborate tables of descent. Ellis, referring to Tahiti (III, 94), declares that "the genealogy of the reigning family was usually traced back to the first ages of their traditional history, and the kings in some of the islands were descended from the gods; whilst the sovereigns of the Sandwich Islands derived their origin from the gods by lineal descent." He further says (I, 123) "the genealogies of the northern islands extend much farther back than those of the southern islands"; and (p. 86) "one method of reckoning time was by *mis* or generations." Grey, too, notices ("Polynesian Mythology," p. 272) that "from Tuparahaki in eleven generations, or in about 275 years, have sprung all the principal chiefs of the Ngatipaoa tribe now living"—and the word *ngati* itself has a genetic meaning.

It is probable that the male, rather than the female, line was followed in most of the pedigrees. But Gill informs us ("Jottings," p. 113) that "Mangaia was anciently ruled by the kings in the name of the invisible gods. These supreme spiritual rulers, though of a distinct and superior family, claiming descent from great Rongo, father of gods and chiefs, *must on the maternal side* be related to the common people. Native Christians speak of Jesus, the visible representation of the true God, as being allied to us sinful creatures *in a similar way* (*iri tama vaina*)."
Now, *tama* is "a child," *ata* is "the wife of a common man" (Pratt), *iri* is "a widow," and *iri vaina* is "a widow woman" (Davies), or, doubtless, a husbandless woman; and so Christ is called "the child of a husbandless woman who was one of the people." Indeed all illegitimate children were designated *tamariki na te Atua*, children of the gods (Gill's "Myths," p. 121); and there was a special form of baptism for infants whose fathers were unknown (Grey, p. 234).

It is certain that some tribes traced their descent through the female line. This may seem strange in view of the prevalent notion that Polynesian women were regarded as inferior and unworthy—an erroneous opinion, the result of hasty and imperfect observation. Surgeon Anderson says (Cook, p. 1643), "The women of Tahiti have not only the mortification of being obliged to eat by themselves and in a different part of the house from the men, but are excluded from a share of the better sorts of food such as turtle, tunny, and some sorts of plantains. They seldom eat pork. The children of each sex also eat apart. The reason they gave for all this was that it is right and neces-

sary it should be so." But what made it right and necessary Anderson did not ascertain. Speaking of the Sandwich islanders he says, "At Oneeheow no instance was observed of the men and women eating together. The latter seemed in general to be associated in companies by themselves" (p. 1717). "At Owhyee the women eat apart from the other sex, and are prohibited from feeding on pork, turtle, and some particular species of plantains. Notwithstanding this interdict, they would eat pork with us privately, but we could never prevail on them to taste the two latter articles of food" (p. 2050).

Now it is well known that the pig, at that time, was of recent introduction, and the reasons why women should not eat its flesh could not have had a sanction so ancient as that which forbade them turtle and plantains.

The mystery is unconsciously explained by Gill ("Jottings," p. 147) who says, "Turtles and porpoises were eaten only by men. The superstition was that if a woman ate of the porpoise her children would have porpoise faces." We may suppose that this belief was afterwards extended to the pig.

As regards the plantain, a similar reason must be sought. Cook observes, in his account of the great marae at Tahiti (p. 84), that "several plantains, and trees which the natives call *etoa*, grew within the enclosure." In another place he says that the same word *etoa* is a general name for the male of any animal. *Toa*, the native term for the casuarina, or iron-wood tree, signifies also that which is savage or bloody (Davies). The intensive *toa toa* is to be disgusted, and *toatoa-papu* is the sickness of pregnancy. Of the plantain, Cook says (p. 1568), "it was always the first thing introduced in all their religious ceremonies." As all red things belonged of right to Tangaroa, the plantain was the property of that god "because of the redness and uprightness of its fruit" (Gill's "Myths," p. 12). One of its names was *uatu*, from *ua* to sprout, and *tu* erect. It is highly probable, then, that for some reason, perhaps only eponymic in origin, certain trees and fruits were regarded as injurious to maternal functions. Gill remarks that "it was formerly unlawful for women to eat eels, and to this day they mostly turn away from this fish with the utmost disgust" ("Myths," p. 79).

Moreover, it may be noticed that the Areoi, a strange association of men and women, who prohibited the rearing of any offspring and practised total infanticide, at the feast of admission to their society "removed the tabu on females who partook with man of the pig and other sacred food" (Ellis, I, 233, 243).

With respect to the custom of eating apart, Cook made many sagacious observations. He says that in New Zealand (p. 178) "both sexes eat together," but that the inhabitants of

Tahiti (p. 95) "though apparently fond of the pleasures of society, have yet an aversion to holding any intercourse with each other at their meals. Even brothers and sisters have their separate baskets of provisions and generally sit at the distance of some yards when they eat, with their backs to each other." In another place he says of the same people (p. 561), "The women are not permitted to eat with the men, nor it should seem to mark their inferiority, but in conformity to a custom which habit has established into a law. Nor is it usual for any of them to eat in company, except upon certain days of festivity." "The captain (p. 996) invited Queen Oberea and her retinue to come on board the ship where an elegant dinner was prepared, of which all but the queen ate heartily; but she would neither eat nor drink."

At Tonga "the women are not excluded from taking their daily repast in company with the men; but there are certain ranks that are not allowed either to eat or drink together" (p. 1489). "The captain dined on shore, Poulaho [the king] sat down by him, but would neither eat nor drink, which was owing to the presence of a female [Moungoula-kaipa] who had been admitted at his request to the dining party, and who, as we were informed, was of superior rank to himself. This lady had no sooner dined, etc." (p. 1431). Further on (p. 1497) the matter is explained: "The late king, father of Poulaho, left behind him a sister of equal rank and older than himself. She, by a native of Feejee, had a son and two daughters. These three persons, as well as their mother, are of higher rank than the king, and are called *Tamaha*, which denotes a chief. One of the daughters is called Moungoula-kaipa."

More light is thrown on the subject by an important passage in Miss Farmer's "Tonga" (p. 145). "Tui-tonga (= king of Tonga) is a priest-king. The civil governor is his brother, Tui-kamokubolu (= king of all the islands). Tui-tonga must marry the daughter of his brother. When she has had one or two children, she is taken away from him. Her son becomes the next Tui-tonga, and her daughter is called Tui-tonga Fefine (= the lady Tui-tonga). Her dignity is very great. Her rank is too high for her to marry any mortal, but she may have a family, and in case of the birth of a daughter, this child becomes the *Tamaha*, who rises higher than her mother in rank and is nearer the gods. Every one approaches her with gifts and homage. Her grandfather will bring his offerings and sit down before her. Sick people come to her for cure."

Miss Farmer asks (p. 134) whether this respect for women accounts for a Tongan legend that, for the first men, wives were brought in a canoe from Bulotu, the land of spirits.

Even Williams, who says so much about the inferiority of

women in the Society Islands, tells us (p. 322 and 348) that Tamatoa was the patriarch of royalty, for his eldest daughter was governor of Huahine, and his grand-daughter was queen of Tahiti. And Cook remarks (p. 78) that a boy called Terridiri, who was heir-apparent to the sovereignty of these islands, at the proper age was to marry his own sister. As regards the Sandwich Islands, Cook records (p. 1,706) that in a morai on Atooi stood "two images near 3 feet high, cut out of one piece of wood, with pedestals. They were said to be Eatona no Veheina or *representations of goddesses*."

The importance which was attached to the female element in relation to progeny is well shown by a proverb. Surgeon Anderson (Cook, V, 1652) mentions three characteristics of the sovereign: being invested with the maro, presiding at human sacrifices, and blowing the conch-shell. Ellis records the proverb (I, 83), "If black be the complexion of the mother, the son will sound the conch-shell; if vigorous and strong the mother, the son will be a governor."

Lastly, the eponymic legends of New Zealand abound with stories of ancestresses. Maui, whose name signifies "to form or make," goes to his ancestress, Muri, for her magic jawbone, for he wanted a piece of it to point his fish-hook withal. Maui's mother sent him to her great ancestress, for with her nail she produced fire. And Maui's ancestress, Hine, was the goddess of death. (Grey's "Polyn. Myth.", pp. 35-69. Cf. *maui fata*, "altar raising," Ellis, I, 349. Elsewhere it has been stated that the word *maui* means "the asker of questions.")

Thus a presumption has been established, it has been made *a priori* probable, that descent would be claimed along a female line as well as by paternity.

Had the Polynesians any means of recording degrees of descent? On Pasque Island, where a written language of a hieroglyphic nature was employed, genealogies were elaborately inscribed on slabs of drift wood (Thomson, "Smithsonian Inst."). How was a pedigree kept elsewhere? In Tahitian, the word *fetii*, which means "to tie or bind," as well as "a binding or knot," means also "the relations of a person." *Aufau* is "the handle" of an implement, and in Samoan, *au* is "a stalk or handle." *Aufau fetii* is "the genealogy of a family," and must have been a staff bound in some especial manner to serve the purpose of a pedigree-stick. Doubtless the long staves, sometimes covered with interlaced bands of party-coloured fibres, sometimes bound with discontinuous ligatures, and often sacred to some deity, were genealogical claims to divine descent. *Aufau atua* is "the genealogy of the gods" (Davies, *sub vocibus*).

Still following the linguistic method, we find that in Samoan

the word *gafā* signifies "descendants, a pedigree," and *gafoa* means "to be notched" (Pratt). An undoubted pedigree-stick, in the British Museum, is figured in Plate 375 of the Partington-Heape Album, and in Roth's translation of Crozet's "Voyage to Tasmania," where it is described as "a staff recording the history of the Ngati-Rangi Tribe" of New Zealand (Fig. 1). Now the word *nati*, or *ngati*, means "tribe" in the sense of "descendants." We are told that "from Tama-te-ra sprang the tribe of Ngati-tama-te-ra" (Grey, p. 254). There can be little doubt that the words *ngati*, "a tribe," and *nati*, "a class," are connected with *nati* "to tie or bind with a cord." The bound pedigree-stick would thus be presumptively anterior to the carved pedigree-stick. Indeed, the staff in question, which can be no other than the genealogical tree of the Rangi Tribe, though carved in wood, is strongly suggestive of a staff bound with an interrupted succession of ligatures. Dr. Stolpe quotes Bastian as saying that such staves go by the name of *hokka-poppa*, or "one after the other"; and we see that the Rangi pedigree-stick is crowned with the god-originator, whose hands of three fingers rest upon his abdomen, whilst there visibly buds off from him a series of eighteen projections, caused by the same number of notches, which, to judge by the terminal symbol, stand for ancestry in the male line. No doubt *hokka-poppa* is a corruption of *whāka-pāpō*, "to place one upon another, to record past events" (W. Williams).

A similar stick is in the Auckland Museum (Fig. 2), and is described as "a genealogical stick; each notch signifies a generation." The larger human figure at one end indicates the god-originator, and the smaller human figure at the other end indicates the chief who was the proud owner of this distinguished pedigree. A third example (Fig. 3) is from the Oxford Museum, but the carving of ancestor and descendant is unfinished.

Sometimes all the ancestors are carefully wrought into the human shape, as in Ellis's illustration (I, 355), also figured by Dr. Stolpe; sometimes the form is not so distinct (Read, "Journ. Anthropol. Inst.", 1891, Plate XIII, Fig. H); sometimes it almost loses human similitude (*ibid.*, Fig. F); and sometimes this is lost altogether. In other cases a representation of the human shape was probably never attempted, and the genealogy was indicated only by a series of rude joints (Fig. 4) (Williams, Edition 1838, p. 55), or of notches (Fig. 5) (Stolpe, Fig. 2), or of pits (Fig. 6) (Cook, Edition 1784, p. 89).

In quite another class of examples the carving is highly elaborate, and successive generations are indicated by doublets and even by triplets, as if to claim descent not from one divine person only, but from two or three. Favourite diads were

Rangi and Papa in New Zealand, Tiki and Hina, as well as Tiki and Tangaroa, in Tahiti, and Tane and Rongo in the Hervey Islands. Rongo's wife was Taka, and his daughter was Tavake, by whom he had a triple progeny, a triad called by Dr. Stolpe "three daughter-sons," namely Rangi, Mokoiro, and Akatauira (Gill's "Myths," p. 16). These, as a trinity, went, in the Hervey Islands, by the single name Tebuakina, and were carved upon a single idol, which was "a principal deity" (Ellis I, 355, Fig. 3). From this triad were descended the original tribes that peopled Mangaia, namely, Matoetoeā, Ngakē, and Akuru (Gill's "Myths," p. 283). The name Tebuakina is doubtless from *puaki* "to speak," passive form *puakina*, and means "that which is spoken to."

In many cases we are not left in doubt as to whether the pedigree-stick is a mark of descent through a line of male ancestors or through a female lineage. The sign of the former is a phallic symbol attached merely as a determinative adjunct. In a staff figured by Dr. Stolpe (Fig. 49), the god-originator, probably Tangaroa, gives issue, by gemmation, to the second in the series, presumably a female, and she gives birth to a male, and the succession is continued in a row of alternate males and females; but that it is a masculine lineage is shown by the phallic symbol that projects from beneath the chin of every second individual on this genealogical tree (Fig. 7).

In an example from the Copenhagen Museum (Fig. 8) the pedigree-stick has its phallic determinative at one end; then comes the head of the proprietary chief who visibly buds off from his divine ancestors; and then follows a succession of generations, indicated by triads, until the god-originator is reached at the other end of the staff. Unfortunately, both this example and that previously mentioned are broken; but a perfect one, similar to that of Copenhagen, is in the Oxford Museum (Fig. 9).

A third variety of the masculine pedigree-stick is described by Williams (p. 98) thus: "The smallest of these idols is about 5 yards in length. Each of them is composed of a piece of iron-wood about 4 inches in diameter, carved with rude imitations of the human head at one end, and with an obscene figure at the other, wrapped round with native cloth until it becomes 2 or 3 yards in circumference" (Fig. 10). Dr. Stolpe gives a cut of a Rarotongan example in the Bâle Museum. They are all remarkable in this, that the row of smaller human heads by which generations are indicated appears only in those terminal portions of the stick that are uncovered by tapa wrappings. Where these enfold and conceal it, the sculptured genealogical links are not continued, though the

tapa is arranged so as to suggest their presence. It was clearly unnecessary for the priestly artificer to be at the pains of carving figures that could not be seen; it was enough that everybody would understand them to be there.

To take the next step in the argument, to show the existence of pedigree-sticks that record a female lineage, is to approach the subject on which Dr. Stolpe has thrown so much light. He has proved what was before only surmised, that a design generally known as the K-pattern, sometimes interrupted, but usually continuous, is in reality a string of human figures, the two horizon zigzags being limbs, and the vertical bars that join them being bodies (Fig. 11). These figures, which almost cover the handle of a Mangaian paddle or axe, are obviously related to the female forms that are carved on the terminal of its shaft, and are morphologically derived from them by a process of evolution or rather of degradation, which has passed through an intermediate stage in which the limbs are represented, not as rectilinear zigzags, but as curvilinear semilunes.

It is abundantly certain that the forms that crown the shaft are those of women, for they are invariably distinguished by pendent-pointed breasts (Figs. 12, 13). The solitary exception that Dr. Stolpe has been able to find is one in appearance only, for in his Fig. 23 the breasts are really fused into a single cone, exactly as are the legs in his Fig. 24.

Both of these carvings belong, one on either side, to the knob or terminal of a paddle-shaft on which are also found, in their typical completeness, those female forms from which are derived the whole series of the so-called ornamentation. And one feature, well-nigh invariable in these uppermost representations that dominate as it were all the others, shall be mentioned in Dr. Stolpe's own words: "The ridge which runs straight down from the trunk to the base-line, and on which the crouched figure appears to rest, I suppose to be only a continuation of the back-ridge which is itself produced by a cutting away of the material on either side. The formation may be due to a design to fill the empty space. Why, in a few instances, it divides itself into two or three points, I cannot explain with certainty" (pp. 219, 220).

That it sometimes divides itself into two or three points (Fig. 13) shows it to be more than a meaningless continuation of the back-ridge; and to suppose it to be merely an attempt to fill a blank space, is to ignore the laws of evolution on which rests the whole of Dr. Stolpe's charming essay. It exists, moreover, in elaborate New Zealand figures which are wrought in a different manner from the Mangaian carvings (Martin's photographs, 4B).

It is now contended that the formation is a sign of genetic descent along the female line. It is *the birth symbol*, the artery of life, the umbilical cord; and its bisection is to be explained by certain curious Polynesian customs. Williams says (p. 466) "Many mothers dedicate their children to a deity, but principally to Hiro, the god of thieves, and to Oro, the god of war. If to the former, the mother went to the marae while pregnant; if to the latter, she went after the child was born."

Grey says (p. 87) "The brother and sister [leaving the husband behind] departed together with the [newly-born] infant, carrying with them the placenta to bury it with the usual rites."

"When a child was born," says Gill ("Myths," p. 36), "the part of the navel-string nearest the infant was secured with a bit of tapa, and then the cord itself was *longitudinally dividea* with a bamboo knife. The dark coagulated blood was then carefully washed out with water and the name of the child's god declared, it having been previously settled by the parents whether the infant should *belong to the mother's tribe* or to the father's. The bamboo knife would be taken to the marae of the god specified and thrown on the ground to rot."

"At Rarotonga" he continues (p. 37), "when a boy was born the navel-string was thus treated over a collection of spears, clubs, and sling-stones. On the birth of the first-born son of the reigning king Makena, a human victim was slain and the royal babe was placed on the dead body for the purpose of severing the navel-string."

Gill further remarks (p. 38), "It is said, of an ill-natured person, 'The name of an evil spirit was pronounced over thy severed navel-string.'"

In this connection it may be mentioned that, in describing an early Cypriote statuette, MM. Perrot et Chipiez observes: "The hands are placed near the umbilicus, and this is much too high, and made too important, perhaps in allusion to birth, and to the independent life in a child" (II, 150, Fig. 99).

Lastly Ellis records (I, 272) what throws a side light on female lineage in Polynesia, that in the marriage ceremony "on some occasions the female relatives cut their faces and brows with shark's teeth, receive the flowing blood on a piece of native cloth, and deposit this, sprinkled with *the mingled blood of the mothers* of the married pair, at the feet of *the bride*."

There is additional proof that these carved shafts of sacred paddles and axes were pedigree-sticks in the name by which the figures upon them were known. Gill tells us ("Jottings," p. 223) they were called *tiki tiki tangata*. Dr. Stolpe too hastily infers from this (p. 232) that "what the ornament is intended to represent is *the image of Tiki-tiki-tangata*, who is, most likely

the Tiki who rules at the entrance of the underworld." But, in the first place, that especial Tiki was the first man and not a god-originator—Adam and not Yahveh. Next, it is probable that Tangaroa and Rongo had a vital basis, and were deified chieftains, whereas Tiki had only an eponymous origin. The name signifies a "fetched" soul, the spirit of a dead man; and this idea, projected backwards, reaches the spirit of the first man who died, and legends clustered round the conception. Further, if Tiki was the first who died, the frequentative or plural *tiki tiki* must mean spirits in succession, or "ancestors."

Lastly, in a Polynesian word compounded of two nouns, that which comes last has a secondary, explanatory, or adjectival force. For example, when a number of men were engaged in pegging a net, and were entangled in it by a stratagem, and drowned in the sea, the place where the exploit occurred was called Kari-hi-tangata, or "human net-sinkers" (Grey, pp. 258, 259; *tari*, weight; *hi*, fishing, Davies).

The conclusion now drawn is that *tiki-tiki-tangata* were the multitudinous human links between the divine ancestor and the chief of the living tribe. But to what ancestry did these pedigrees of female lineage assert a claim? From what goddesses was it the pride of Mangaians to be descended, unless from the mother, the wife, and the daughter-wife of Rongo—from Tu-metua, Taka, and Tavake.

In Mangaia all the gods were called the children of Vātea, and of these Tane was one. His name indicates the generative principle in Nature, and the word is used to designate a husband, and even a man who is betrothed. There seem to be variants of him, and he assumes many aspects. In New Zealand, Tane-mahutu separated Rangi from Papa and fixed the heavens in their place (Grey's "Myth," pp. 4, 84); whilst in Mangaia there were Tane-papa-kai, "the food-storer," Tane Ngakiau "the valiant," and some others. He has various appellations such as *ereue*, fierce, and *mata-ariki*, royal-visaged. The tenth or last heaven, the abode of the highest gods, was called *te rai haa-mama no Tane*, "Tane's opening in the sky."

A pigeon was sacred to him, a linnet also, and a kingfisher.

"We are all chosen birds,
Messengers of Tane, to save you."

(Gill's "Myths," p. 40.)

The *kauā* or kingfisher is considered good eating by all the natives except this tribe of Tane. "A *kauā* darted out of the bush and uttered its cry just over the head of Itieve, who said, 'Aye, Tane, it is thou who art warning me'" (Gill's "Jottings," p. 100).

He had a large "national temple" on Huahine. "The

Tahitians addressed their petitions to Tane" (Cook, p. 102), and "Tupia prayed to him for a wind" (p. 106). He was the god of the Society Islands (p. 1657).

In Mangaia he was especially the drum-god and the axe-god; he presided over the erotic dance as well as over the war-dance.

His fête was held on the night of the 26th of each month. When the planet Venus rose, Tane opened his bright eye (Gill's "Myths," p. 50).

But to understand fully the symbolism of this god, one must go into the details, or rather into the evolution, of his drum and of his axe.

Ellis tells us (I, 179) that in making cloth, a stout piece of wood resembling a beam, 20 or 30 feet long and from 6 to 9 inches broad, *with a groove cut in the under side* [no doubt for the purpose of making it steady] is placed on the ground. Across this the bark is laid and beaten with a heavy wooden mallet.

Further (p. 184), "the piece of wood being hollow on the under side every stroke produces a loud sound, and the noise occasioned by sixteen or twenty mallets going at the same time is almost deafening; though, heard at a distance, the sound of cloth-beating is not disagreeable."

Mimic cloth-boards were beaten at certain fêtes (Gill's "Myths," p. 259).

Cook tells us (p. 1393) of some musical instruments of Hapae (or Haapai), which were employed to accompany singing and dancing, that "the performers had each pieces of *large bamboo*, from 3 to 6 feet in length, each played on by one man, who held it almost vertically; *the upper end whereof was open but the other closed by one of the joints*. They kept striking the ground, though slowly, with the close end, and thus produced a variation in the notes according to the different lengths of the instruments, but all were of the bass or hollow kind, which was counteracted by a person who struck nimbly a piece of the same substance, *split, and lying upon the ground*, furnishing a tone as acute as the others were grave and solemn."

In Tonga a similar performance was observed (*ibid.*, p. 1416). At a singing concert the natives used "three long and two short bamboo instruments with which they struck the ground end-wise. There were two others that lay side by side on the ground, one of which was partly split. On these a person continued beating with two sticks."

The latter drum is what Ellis and Davies call *ihamo*, and Gill *kaara*, "the awakener" ("Myths," p. 270), a term that is no doubt related to the verb *ta* and *tata* (= *ka*) "to strike" (Davies), and "to beat with a stick as the native drum, or the mat, at a night dance" (Pratt).

Ellis says (I, 197) "the *iħara* was a noisy instrument. It was formed from the single joint of a large bamboo cane, cut off a short distance beyond the two ends or joints. In the centre a long aperture was made from one joint towards the other. The *iħara* when used was placed horizontally on the ground and beaten with sticks. It was not used in their worship, but simply as an amusement; its sounds were harsh and discordant."

Returning to Tonga, we find it recorded (Cook, p. 1419) that the drums used at dances "were cylindrical pieces of wood, from 2 to 4 feet in length, trunks of trees, some of them twice as thick as an ordinary man, and some smaller. They are entirely hollow, but close at each end, and open only by a chink about 3 inches in breadth running nearly the length of the drum. By this opening the rest of the trunk is hollowed, which must be an operation of some difficulty. Having the chink turned towards them, the natives sit and beat vigorously upon it, with two cylindrical pieces of wood, as thick as the wrist, and about a foot in length, producing a powerful sound. They vary the strength and rate of their beating, and likewise change the tones by beating towards the end or middle of the instrument. It is called Naffa."

An instrument closely similar to this in dimensions is now shown by a diagram drawn to size. The Naffa is from 2 to 4 feet in length, and as thick as a man; this is 42 inches long and $12\frac{1}{2}$ inches in diameter. The chink of the Naffa is about 3 inches wide; this chink measures $2\frac{1}{2}$ inches. In both cases the mallet is a foot long.

But the drum here depicted is of extreme interest because it stands vertically on one end, whilst the other or upper end is crowned with the head of a god. It is in the Copenhagen Museum and is said to be from Java (Fig. 14).

The suggestion is now made that from bamboo instruments, such as Cook describes, are descended not only the upright drum but also the Mangaian axe. The "large bamboo," held and used vertically, "the upper end open and the lower end closed by one of the joints," had only to be covered with any membrane to become a *pahu* or *pau*; and it should be noted that *pau*'s means "the skin of animals, the bark of trees" (Pratt).

Moreover, some of the forms of the *pahu* are strongly suggestive of a bamboo prototype; those, for example, figured by Cook (Edition 1790, p. 1535) as met with in Tahiti, or drawn in the Partington-Heape Album, Plates 15 and 16. Cook says (p. 96) "their drums are formed of a circular piece of wood, hollow at one end only. These are covered with the skin of a shark and beaten with the hand instead of with a stick." He calls this drum a *pānoo* (p. 101), probably a misprint or mis-

writing for *pahoo*. The "closed" portion, to which are fastened the cords of sinnet which tighten the membrane, seems to indicate the bamboo joint, and the openwork below appears to be an evolution of those tenon-like feet, or dentils, that often projected beyond the joints of the *kaara* or horizontal drum.

It may be noticed in passing, that there are certain bamboo chunum boxes met with mostly on the Solomon Islands, that look as if they had been made by artificers whose minds were dominated by the "drum skeuomorph," controlled, that is, by a tendency to produce as a functionless ornament what was always present to their senses in structural utility. The top and bottom of the box are closed by the bamboo joint, but beyond one end projects a hollow open structure identical in appearance with that beneath a *pahu*. In other boxes there is a similar motive, but it occurs only as a coloured design.

Ellis says (I, 193) "the *pahu* was cut out of a solid piece of wood. The block was hollowed out from one end, remaining solid at the other, and having the top covered with a piece of shark's skin. The *pahu ra*, or sacred drum, which was *rutu* or beaten with two heavy sticks on every occasion of extraordinary solemnity at the idol temple [on Tahiti] stood 8 feet high." "The thrilling sound of the large drum at midnight, indicating a human sacrifice, was most terrific. Every individual trembled with apprehension of being seized" (p. 195).

Tane, as patron of the war-dance (Gill's "Myths," p. 259) was saluted with every kind of drum-like instrument. To quote Gill, who translates a drama (pp. 260-262):

"Now for a war-dance as the *pahu* we lift aloft !
Spirit-land is deeply stirred
At the music of the *kaara* ;
Oroiti and Tane approach ;
Softly sounds the cloth-beating mallet over the sea,
Beat away ! Beat away !"

But the drum was especially sacred to Tane as the generative principle, as Tane-metua, the male parent. As night drew on his festival began, and the god was invoked :—

"O Tane-metua, rise from the Shades,
Delay not in thy dance.
O Tane, the fragrant pandanus on the beach is mine,
Red berries adorn me,
Abundance of fragrant leaves,
Beautiful sweet scented flowers,
With garlands of myrtle for Tane's coming,
And white pandanus blossoms." (Gill, pp. 219, &c.)

"What passes yonder at the margin of the sea ?
The god reveals himself, now Tane stands revealed.
What rapture pierces my body,
Oh that it would endure like that of a dragon-fly in the sun." (Ibid., p. 106.)

"Beat Tane, the delightful!
From the *kaara* his voice issues.
So thrilling is Tane's voice
The heaven itself is shaken;
O Tane, thee will I beat."

(Ibid., p. 219.)

It is evident from these vigorous metaphors, which are here rendered more literally than by Gill, that the drum was not only associated with a Tane cult in the erotic dance, but was regarded as Tane's embodiment; when the drum was beaten, it was Tane that was struck, and from the *kaara*'s fissure it was Tane's voice that issued.

We find an interesting eponymic legend associated with the drum-god, with the drum-like noise of the waves—for the ocean was called the sea of Tane ("Myths," p. 18)—and with the masculine significance of his name. The titular god of Huahine had an only daughter who was unwedded, and no lover was to be found for her on her own land. Her parents, therefore, put her in a drum called Taihi (*tai*, the ocean) under the care of Tane, and sent her to sea in search of a husband (Davies, p. iv).

The view is now advanced, first as regards the *pahu*, that the diminutive figures of the human form, or of human heads which serve as cleats for fastening the sinnet stretching-cords, represent consorts of the god Tane, and that the remaining ornament, the *tiki tiki tangata*, is the tribal pedigree, the claim to divine descent through a female line; and second, as regards the *kaara*, that at one stage of the drum's evolution, but after it had passed from bamboo to wood, the horizontal instrument assumed the erect form, more appropriate to the god, and was then surmounted, as in the so-called Javan example, by Tane's head, which subsequently gave place to Tane's axe (Fig 15). As the cult differentiated, the symbolism differentiated too. Tane the drum-god was represented by the *pahu*; a distinctive symbol was required for Tane the axe-god.

It is remarkable that the typical Mangaian axe was exclusively associated with *Tane mata ariki*, "Tane the royal-visaged," a name, says Gill ("Myths," p. 274), "identified with the clever Mangaian method of securing stone-axes to wooden handles" by means of shark's skin and sinnet. His teeth, we are further told (p. 263) were stained with his victim's blood; he was *Tane kai aro*, "Tane the man-eater" (*kai* food, *aro* a person: "Myths," p. 30).

"As if a conch-shell sounded
Is the falling of the axe;
Strike the head (of the sacrifice)."

(p. 313.)

"The wounded are shrieking,
But they wake only to be slain,
For Tane has conquered."

(p. 314.)

Both Tane and his wondrous axe were believed to have come from Tahiti. We read,

"Here is Tane, the royal-visaged,
The axe coveted by the god Tinirau,
The famed Tahitian axe
To slay warriors lapped in sleep!"

(pp. 274, 275.)

The name *Tane mata ariki*, Tane with the royal face, whose teeth were stained with blood, must assuredly have been bestowed when the sculptured head of the god surmounted the erect *kaara*; and must have been retained when the head had become an axe, the neck a shaft, and the drum-cylinder a hollow stand.

Let us enumerate the features, the distinctive peculiarities, of the typical Mangaian axe (Fig. 15) :—

1. The stone implement is bound to the wooden shaft exactly as in the case of an ordinary axe (Fig. 15 *a*).
2. Nevertheless, the axe, as a whole, is functionless: what purports to be a handle is manifestly impracticable.
3. It is constructed so as to stand erect, stone implement uppermost.
4. The handle consists not of one but of three portions.
5. The uppermost portion is no longer than is necessary for the reception of the ligature which fastens on the stone implement (Fig. 15 *a-b*).
6. The middle portion is always solid, always larger than the rudimentary shaft above, and smaller than the part beneath, and is usually cylindrical (Fig. 15 *b-c*).
7. The lowest portion is always hollow, always the largest, and is usually polygonal (Fig. 15 *c-d*).
8. The junction of the two upper portions is abrupt (Fig. 15 *b*).
9. The junction of the two lower portions is marked by a square shoulder (Fig. 15 *c*).
10. At the lower end, and often at both ends, of the lowest portion, are numerous projections, dentils, or tenou-like feet (Fig. 15 *c* and *d*).
11. In this portion of the shaft, transverse closings or stops occur, that are not only functionless, but must have greatly added to the difficulty of hollowing it out (Fig. 15 *c* and *d*).
12. This hollow portion presents a number of openings, sometimes square and sometimes oblong, but always rectangular (Fig. 15 *c* and *d*).
13. The openings have specific names.
14. The axe is identified with *Tane mata ariki*, Tane with the royal face, though no royal visage is now represented.
15. The entire shaft is generally covered, to the exclusion of all other forms of ornament, with the K-pattern, known by the name of *tiki-tiki-tangata*.

16. By selection, it is possible to form a series of these typical Mangaian axes that, in the lowest portion, bears a striking resemblance to a selected series of samples of the *pahu*.

17. The stone implement is wrapped in shark's skin and is bound with sinnet in a manner said to be peculiar to Mangaia.

The theory now advanced is capable of explaining all these remarkable features, and must hold the field till something better is propounded:—

1. The stone implement is securely fastened on because it represents the surviving portion of an ordinary axe.

2. But the axe, as a whole, is functionless and impracticable, because what purports to be the handle is a transformed *kaara*.

3. For the same reason it can rest, when required, as the erect *kaara* rested.

4. The handle consists of three portions, because it has descended from something that was not a handle.

5. The uppermost portion is as short as the turns of the ligature admit, because it is the head of the axe that represents the head of the god.

6. The middle portion, being the neck of the god, is always solid, larger than the shaft above, smaller than the base below, and usually cylindrical.

7. The lowest portion is always hollow, because it is evolved from the wooden *kaara*, which was itself hollowed out on the pattern of the bamboo prototype.

8. The junction of the two upper portions is abrupt, because it is the spot where the head of the god was substituted by the head of his axe, in order to symbolise Tane the axe-god, as distinguished from Tane, the drum-god, who continued to be represented by the *pahu*, and the figures that adorn it.

9. The square shoulder at the junction of the two lower portions represents the upper surface of the erect *kaara*.

10. Tenon-like feet project from the lower end, and often from both ends, of the hollow portion, because they so projected originally from each end of the horizontal *kaara* of bamboo. Similar projections survive in design at the base of the erect Javan *kaara* of wood.

11. The useless transverse closings represent the original bamboo joints as well as the solid ends of the wooden *kaara*. In spite of the fact that their presence increased the difficulty of hollowing out the shaft, they were reproduced in obedience to a well-recognised law.

12. The square and oblong rectangular openings have an analogous explanation. They indicate the original aperture, whether the slit in the bamboo, or the single or double chink

in the wooden *kaara*, through which the drum was excavated in order to secure its resonance. The great increase in the number of apertures, helped by rectangular designs on horizontal instruments, took place as an evolution of ornament that largely consists in a multiplication of functionless details.

13. As regards the specific names of the openings, we are told by Gill ("Jottings," p. 223), that "the square holes are known as *ai tuna*, or eel-borings," literally eel-eatings, a term which suggests the hollowing out of a tree-trunk to make the wooden *kaara*; and that "the lateral [oblong] openings are naturally enough called *kavava*, or clefts." This expression, which Davies renders "a crack or split by the sun," clearly points to the original split bamboo.

14. Gill observes ("Jottings," p. 224) that "*Tane mata ariki*, Tane with the royal face, was enshrined in a sacred triple axe, which symbolised the three priestly families on the island of Mangaia." This axe was buried in a cave and has disappeared. But the statement reveals a time when Tane's stone axe had not banished the memory of Tane's royal head, and when Mangaian tribes claimed descent from the god himself.

15. The K-pattern which covers the shaft of the sacred Mangaian axe, is an assertion of this claim, a Tane pedigree, the *tiki tiki tangata* of the clan. "Awake Tane!" was the invocation, "Awake unnumbered progeny of Tane!" (Ellis, I, 343).

16. When a structure is no longer functional, and yet is regarded with interest, the form in which it is reproduced is liable to changes that are unceasing, though the elements on which its primal function depended are well-nigh indestructible; and when a religious emblem has lost its original definiteness and yet retains a mystical meaning, the essentials of the symbolism are almost as permanent.

One phase of the metamorphosis of the Mangaian axe has already been mentioned, the great multiplication of the apertures in its hollow portion, the transformed *kaara*. It should be noticed further, that this portion often becomes pyramidal as if to increase the stability of its erect position. Moreover, it often spreads upwards to such an extent as to envelop and disguise the middle portion, but the solid neck of the god still exists beneath the superficial open-work that overlaps it.

On the other hand, it often occurs that the hollow portion gradually dwindles, whilst the middle and solid portion grows longer and slenderer, until the dimensions of a practicable shaft are nearly attained. Nevertheless, the genealogical K-pattern continues to adorn it.

Perhaps the most remarkable mutation is that towards angularity. For, not only is the altered *kaara* thus affected, the cylindrical neck itself in many instances becomes polygonal. But a like tendency is to be observed in the evolution of the lower portion, or stand, of the *pahu*. In order to increase its resonance, the *pahu* is raised either upon legs or upon a base in which perforations are so arranged as to give a semblance of legs. Straight lines joining such legs or perforations would describe a polygon, and would originate a movement from the circular form to the angular. This change would be arrested in the *pahu*, which is functionally a cylinder; but in the transformed *kaara* there would be no functional hindrance to such a movement when once begun; and that it began in the way conjectured is shown by the mutual resemblance that often exists in the lower portion of both structures.

17. Lastly, it is hardly too fanciful to surmise that the shark's skin, surrounding the stone implement fastened with sinnet lacings, which is a functional part of the *pahu*, was adopted for symbolic reasons by priestly artificers in "the clever Mangaian method" of axe-construction.

And now, if any substantial acceptance is given to the views here advanced, the dismal and confused phantasmagoria of savage art in the South Seas is at once resolved into dignity and order; and the broad conclusion can be reached that Polynesian mythography is a vast symbolism of origin and descent, and that, breaking up under the influence of primitive structure-forms and limited by rude implements and intractable materials, it constitutes the only basis of distinctive Polynesian ornament.

P.S.—It ought not to be overlooked that the word *tatau* "to tattoo," means also "to mark or count"; that *iho* is "to come down, as from an eminence"; and that *iho-tatau* is "a reckoning of descent, or genealogy." It has long been understood that tattoo markings are often of tribal significance.

Explanation of Plates XX-XXIII.

PLATE XX.

Fig. 1.—"Staff of brown wood carved on both sides. It was used as a record of the history of the *Ngati-rangi* tribe, its last New Zealand owner having been the chief *Te-Korokai*. Length, 41 inches (British Museum)." This description is given by Mr. H. Ling Roth, who kindly lends the block, in his translation of "Croat's Voyage to Tasmania," &c. Dr. Stolpe quotes Bastian, p. 199, as saying that "such slaves go by the name of *kokko-poppa*," or "one after the other." The word is a corruption of *whaka-papa*, New Zealand. At one end is the ancestor, human or divine, and at the other end is a phallus. The well-known border pattern in this and in the following figure suggests the *quipu*, a method of registering events by knottings of cord.

FIG. 1.



FIG. 2.



Ulluri-pukate staff — Full Bone cult.

FIG. 3.

FIG. 4.



FIG. 5.

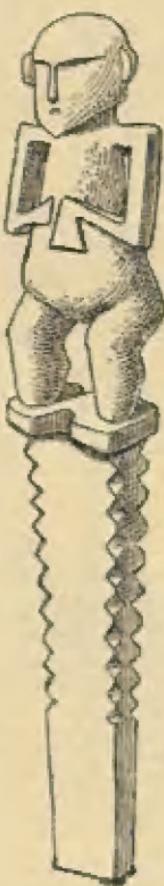


FIG. 6.



FIG. 7.



FIG. 8.

FIG. 10.

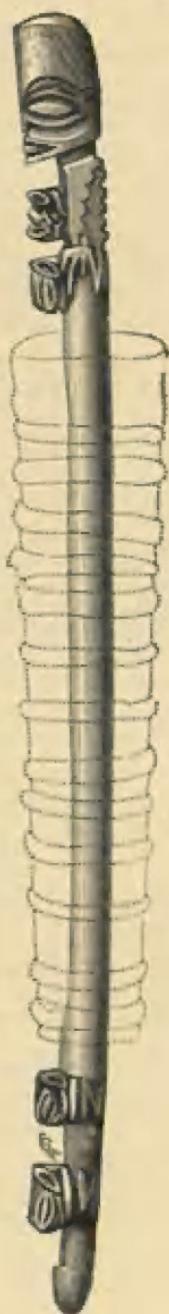


FIG. 9.



FIG. 11.



FIG. 9A.

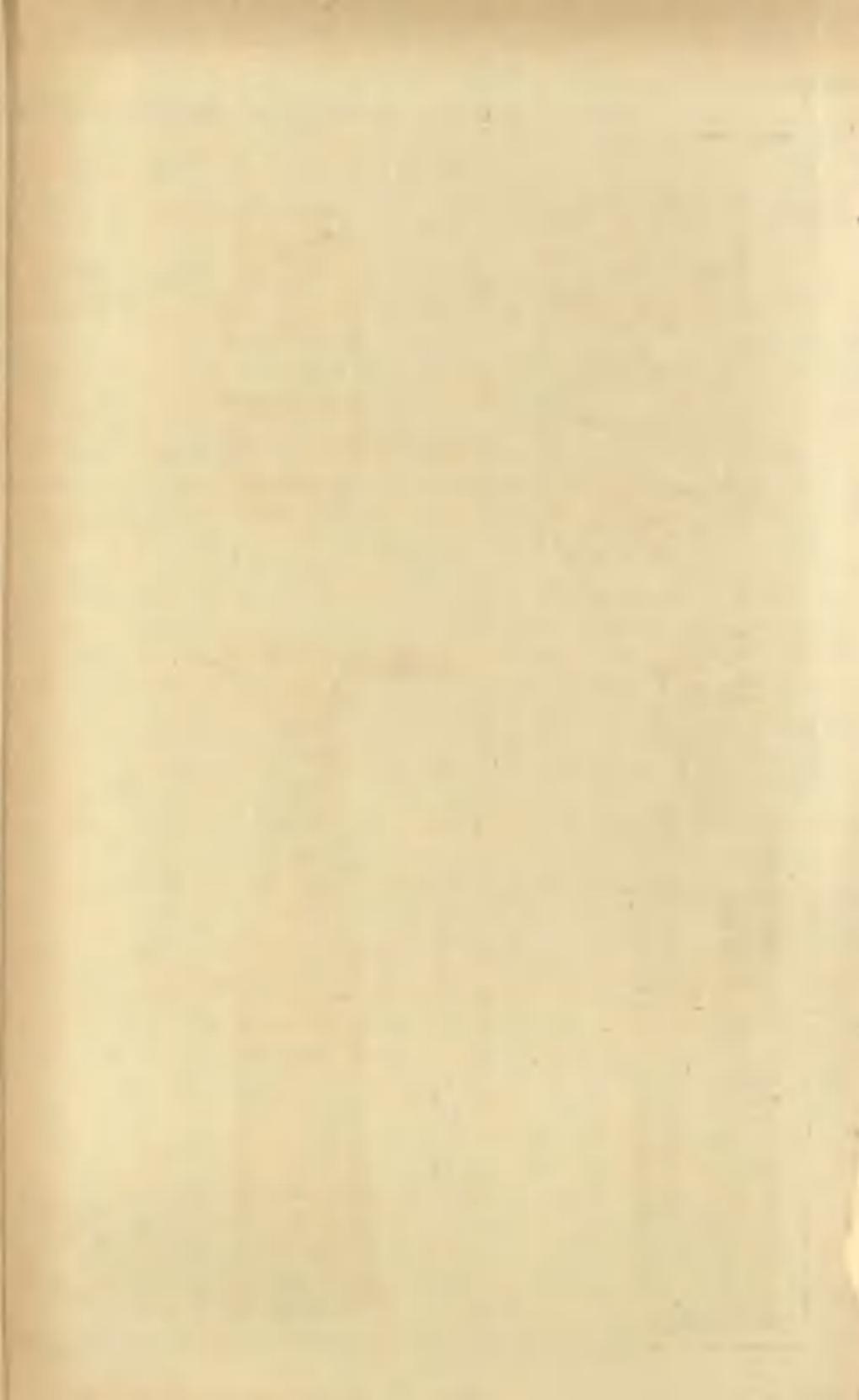


FIG. 12.

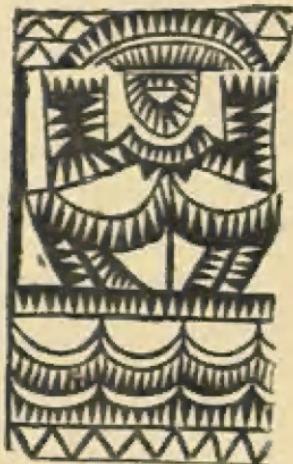


FIG. 13.



FIG. 14.



FIG. 15.

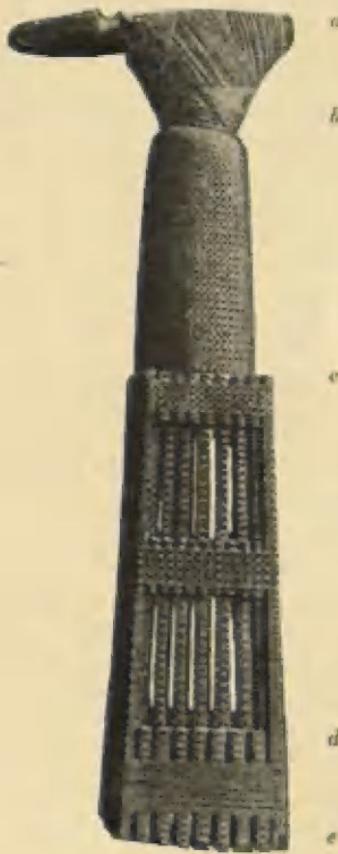


Fig. 2.—A similar staff, from New Zealand. It is described in the Auckland Museum as a "genealogical stick: each notch signifies a generation." The ancestor is at one end, and the chief, for whom the stick was carved, is at the other.

Fig. 3.—Maori pedigree staff, from the Pitt Rivers' Collection, Oxford.

PLATE XXI.

Fig. 4.—From Williams' "Missionary Enterprises," Edition 1828, p. 55. It is called "an idol."

Fig. 5.—From Stolpe's "Evolution of Savage Ornament," Ymer, 1890, p. 204. It is called "Figure of Tangaroa, of wood, Tahiti, Basle Mission-house."

Fig. 6.—From Cook, Edition 1784, p. 89. It is the handle of a sacred fan.

Fig. 7.—From Stolpe, p. 241, "Wooden figure of a god" "Present length, 74·5 cm. Munich." It is broken.

Fig. 8.—From the Copenhagen Museum. It is broken.

PLATE XXII.

Fig. 9, Fig. 9A.—From the Oxford Collection. The plain middle portion is not shown.

Fig. 10.—From Stolpe, p. 242. "Wooden figure of a god." "Length, 92 cm. Rarotonga, Basle Mission-house." A similar object is figured in Williams, p. 100. Note the *bat-like, listening ears* in the last four figures, 7, 8, 9, 10. "Tario-ssi, or Great Ears, was the name of a god of whom the king himself was priest." Williams, p. 74.

Fig. 11.—From Stolpe, p. 224. "Upper end of a staff. Length, 111·5 cm. Munich." It illustrates the metamorphosis of the human form into zigzags.

PLATE XXIII.

Fig. 12.—From Stolpe, p. 220. "Part of the terminal of a paddle-shaped implement. Vienna." It illustrates the metamorphosis of the human form into semilunes. But, especially, it shows "*the ridge* which runs straight down from the trunk to the base-line."

Fig. 13.—From Stolpe, p. 222. "Stretching-claw of a drum. Berlin." It shows *the ridge dividing itself into two*.

Fig. 14.—An erect *kaora*, surmounted by the head of a god. Java. Copenhagen Museum. A similar *kaora* is postulated for Mangnus.

Fig. 15.—A typical Mangalan axe. Copenhagen Museum. The letters *a*, *b*, *c*, *d*, *e*, in this and in Fig. 14, show the parts that are mutually related.

JANUARY 10TH, 1893.

EDWARD W. BRABBOOK, Esq., F.S.A., Vice-President, in the Chair.

The Minutes of the last meeting were read and signed.

The election of TAW SEIN KO, Esq., of Cambridge, was announced.

The following presents were announced, and thanks voted to the respective donors :—

FOR THE LIBRARY.

- From the AUTHOR.**—Notes on Recent Explorations in British New Guinea. By Compts Trotter, Esq. 8vo. 1892. pp. 9.
- From the PUBLISHERS.**—English Folk-Rhymes. By G. F. Northall. 8vo. (Kegan Paul, Trench, Trübner, and Co.) London, 1892. pp. xii, 566. (10s. 6d.)
- Stories told in an African Forest by grown-up children of Africa. By A. J. Mounteney Jephson. 8vo. (Samson Low, Marston, and Co.) London, 1893. pp. xii, 168. Illustrated.
- The Great Indian Religions. By G. B. Bethany, M.A., B.Sc. 8vo. (Ward, Lock, Bowden, and Co.) London, 1892. pp. viii, 292. Illustrated.
- From the TEXAS ACADEMY OF SCIENCE.**—Transactions. Vol. i, 1.
- From the KAISERLICHE AKADEMIE DER WISSENSCHAFTEN (Vienna).**— Sitzungsberichte. philos-histor. Classe, 124, 125; Register, 111-120; math.-naturw. Classe, I. Abth., 1891, 8-10; 1892, 1-6; IIa. Abth. 1891, 8-10; 1892, 1-5; IIb. Abth. 1891, 8-10; 1892, 1-5; III. Abth. 1891, 8-10; 1892, 1-5.
- From the ASSOCIATION RUSSE POUR L'AVANCEMENT DES SCIENCES PHYSICOCHIMIQUES, NATURELLES, ET BIOLOGIQUES.**—Rapport aux Congrès Internationaux de Moscou. 4to. Moscow, 1892. pp. 10.
- From the ESSEX FIELD CLUB.**—The Essex Naturalist. Vol. vi, 11.
- From the ROYAL UNITED SERVICE INSTITUTION.**—Journal. No. 178.
- From the INDIA OFFICE.**—Epigraphia Indica and Record of the Archaeological Survey of India. Parts X, XI.
- From the EDITOR.**—Argo. Vol. i, 5, 6.
- Journal of Mental Science. No. 128.
- Nature. Nos. 1208-1211.
- Science. Nos. 512-515.
- L'Anthropologie. Tom. iii, 6.
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- From the ROYAL SCOTTISH GEOGRAPHICAL SOCIETY.**—The Scottish Geographical Magazine. Vol. ix, 1.
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- From the SOCIETY OF BIBLICAL ARCHAEOLOGY.**—Proceedings. Vol. xv, 2.
- From the SOCIÉTÉ SCIENTIFIQUE DU CHILI.**—Actes. Tome ii, 2.

A Paper by Dr. ANDREW DUNLOP, on "The Ethnology of Jersey," was read.

A Paper by Miss A. W. BUCKLAND was read, on "Points of Contact between Old World Myths and Customs and the Navajo Myth entitled 'The Mountain Chant.'"

Mr. BRABBOOK, Mr. LEWIS, and Mr. HOLT took part in the discussion.

A CONTRIBUTION to the ETHNOLOGY of JERSEY. By ANDREW DUNLOP, M.D., F.G.S.

THIS attempted enquiry into the racial elements of the Jersey people has been made entirely from the anthropological point of view, and the colour of the hair and eyes, the shape of the head, and the stature have been the chief objects of investigation, as being most likely to yield the sort of evidence required.

The number of persons examined—239—may not, perhaps, be considered sufficient out of a population of about 54,000, and it is to be regretted that there were not more representatives of the inhabitants of the north, and north-western parts of the island amongst them, where the blood is probably less mixed.

Pains were taken in every case, however, to ascertain that the subject of examination came from old Jersey stock, with little or no admixture of non-insular blood.

Of course some were of supposed or known French origin, but if the family had been two or three hundred years in the island, I assumed that they had acquired a sufficiency of what may be called the original blood of the island to make them fit subjects for examination. Several of the families came into the island after the Revocation of the Edict of Nantes in 1685.

The method adopted with regard to the classification of hair and eye colours hardly requires explanation, except that by a "mixed" eye, I mean one where the colours grey or blue are associated in some way or other with brown, either when the dark and light colours are mixed together, forming a sort of hazel or green, or where they occur in separate concentric bands.

Many of these eyes would be classified as "dark" by most anthropologists.

With regard to the measure of head form, however, I should explain that I have restricted myself to the cephalic index, and

that the antero-posterior measurement which I used extends from the ridge of the brow immediately above the root of the nose (the glabella) to the most distant point in the same line behind. The transverse diameter is simply the greatest width of the head wherever it could be found. Roughly speaking, all heads where the breadth is 80 per cent. or more, that is, which have an index of 80 or over, are called brachycephalic, or broad-headed, and those with an index of 78 or under are called dolichocephalic, or long-headed.

The races from which we may suppose the Jersey people to have drawn their blood are, firstly, the pre-Aryan inhabitants of north-western Europe, and for the sake of convenience we may call this race the aboriginal one. Secondly, the Celts, that is to say, the original Celtic speaking people or peoples; and thirdly, the Teutonic and Scandinavian peoples who overran so much of Europe between the end of the third and beginning of the eleventh centuries. All these elements may enter into the composition of the present population of the island, and it is the endeavour of the present enquiry to ascertain whether they are now to be found amongst them, and in what proportion they exist.

The first inhabitants of Europe of whom we have any knowledge, the contemporaries of the mammoth, were markedly dolichocephalic. The earliest of these Palæolithic men—the Canstadt race, as they have been called—were of short stature, as testified by some recent discoveries at Spy. They were succeeded in late Palæolithic or early Neolithic times by another dolichocephalic people, the race of Cro-magnon. This race was considerably taller than the preceding one, and was muscular, with rugged features. But what concerns us most is that in the Neolithic age, Britain and a great part of western and southern Europe was occupied by a short, dark, long-headed race, slightly built, with gentle features, and we have every reason to believe, with dark hair and eyes. There is also evidence that either at the very end of the Paleolithic period, or what is more likely, at the beginning of the Neolithic, a new race began to appear on the scene—a short, dark, broad-headed people. They speedily spread themselves over a great part of western Europe, displacing their dolichocephalic predecessors, and their descendants, who preserve most of their physical characteristics, now occupy a territory extending from the west coast of Brittany, across the centre of France into Switzerland. There is no indication that they ever reached Britain, where the short dolichocephalic Iberian race, whose remains are found in the Neolithic long barrows, were still to be found at the time of the Roman occupation. Tacitus¹ describes them in a well-known passage,

¹ "Agricola," cap. xi.

as the Silures, inhabiting what is now part of Wales. He speaks of their swarthy complexions and curly hair (*colorati vultus, torti plerumque crines*) and thinks that they were descended from a colony of Iberi from Spain, which country, according to the geographers of his time, was not far from the west coast of England.

The aboriginal characteristics that we have to look for, then, are dark eyes, hair, and complexion, with short stature, combined, considering the position of Jersey, with broad-headedness.

What the characteristics of the Celts may have been is a question that will be more easily answered when the authorities have made up their minds who the Celts were. It is to be remembered that the terms "Celt" and "Celtic" are generally very vaguely used.

As Broca has said, there are the "Celtes de l'histoire, les Celtes de la linguistique, il y a les Celtes de l'Archeologie, et il y a encore les Celtes de la Craniologie."

The short, dark, broad-headed Breton, and the tall, fair, long-headed Highlander, are both called Celts, though they are anthropologically very different from each other. At the dawn of history, as now, there can be little doubt that the Celtic languages were spoken by peoples of different stocks, and of mixed race. The term "Celt," however, is a very convenient one when it is understood to mean a person who speaks a Celtic language, or whose ancestors spoke one in former times.

The typical Gaul or Celt of the classical authors was fair, blue-eyed, tall, and large limbed. We have similar testimony with regard to the Ancient Britons, but some authors say they were not so fair as the Gauls, and this is supported by some direct evidence, such, for example, as the hair colour of the figures represented on the mosaic alluded to by De Belloguet.

The ancient writers were probably not very discriminating ethnologists, and they may have sometimes confounded Gauls with Germans, or they may have fallen into the common error of ascribing to a whole people certain physical characteristics which struck them in some of its representatives. Also it is to be remembered that brown hair, even when not of a particularly light shade, associated with a white skin and blue or grey eyes, would seem a very fair complexion to a Roman accustomed to the darker hues of skin, hair, and eyes around him.

Amadée Thierry,¹ on linguistic grounds, divided the Celtic race into two branches, the Galls and the Kymri, the former being the first to arrive in Western Europe.

W. Edwards,² shortly afterwards confirmed this view, but

¹ "Histoire des Gaulois."

² "Des caractères physiologiques des races humaines."

founded his conclusions on anthropological observation. He said that the Galls or Gaels were round-headed and of short stature, while the Kymri were tall and long-headed.

M. Broca¹ who adopted and developed these opinions, has been their chief expositor. He says "that the Gauls formed two distinct races, the Galls and the Kymri. The Galls occupied part of Spain, the north of Italy, Ireland, and a considerable part of Britain, but their chief centre was in Gaul, where they inhabited the territory described by Caesar as bounded by the Seine, the Garonne, the sea, and the Alps. This people, the Celts of Caesar, to whom the name of Celts should be restricted, had occupied the country from the earliest times, while the Kymri were strangers who had inhabited the Crimea and shores of the Black Sea, but were driven thence by Scythian invaders, and about the year 613 B.C. found refuge on the shores of the Baltic, in the Cimbric Chersonese, Danmark, where they became known as the Cimbri. From thence a part of the nation moved westward, and under the name of Belgae drove back the Celts from the north-east of Gaul, and formed the Belgic confederation between the Rhine and the Seine. Thence they spread themselves over the Channel into Britain, and the south of England was inhabited by them at the time of Caesar's invasion. The Galls, or true Celts, are short, dark, and broad-headed, while the Kymri are tall, fair and long-headed.

These two races are to be found in Brittany, the Galls or true Celts in the west and centre, the Kymri in the north. These Kymri, he thinks, came chiefly from Britain at the time of the Anglo-Saxon invasion. Thus the Celts, according to Broca, are the short, dark, brachycephalic race already alluded to, as displacing the dolichocephalic race. They are the only true Celts, says M. Broca, speaking a Celtic language, and this he seems to think they derived, with some of their blood, from their Kymric conquerors. So, according to Broca, the true Celts were short and dark, while the ancients said they were tall and fair; but then, as M. Broca remarks,² the classical writers had not the advantage of being acquainted with the work of modern French ethnologists.

Some, perhaps most, British authorities hold the opinion that the tall brachycephalic people of the round barrows of England, who appeared in the country at the beginning of the bronze age, were the first Celts to arrive in England.³ But here is evident some of the confusion which, as de Belloguet says, is

¹ *Vide* various papers in "Mem. d'Anthropologie," vol. i.

² "Mem. d'Anthropologie," vol. i, p. 282.

³ Rolleston in "Greenwell's British Barrows," pp. 631, 632.

"comme un sort jeté sur les études celtiques," for it seems to be agreed that the Gaels were the first Celts to appear, while these first Celts of the round barrows were said to be decidedly Kymri. Also Edwards and Broca say the Kymri are long-headed, while the "Kymri" of the round barrows are distinctly broad-headed. In addition to this, it is a matter of dispute whether the Cimbri were Celts or Germans, and finally it is doubted by many whether there is any connection between the Kymri or Cymry and the Cimbri further than a resemblance in the sound of their names.

The tall broad-headed people of the round barrows were of a different race from the short Celts of Broca, and whoever they were, they have left little trace behind them, for the Ancient Britons of later times were almost uniformly dolichocephalic. Whatever may have been the complexion of the original Celts, it is a fact that now, in all the Celtic parts of France and England and in most of the western parts of those in Scotland and Ireland, the proportion of dark hair and eyes is high, and in every one of them in Great Britain and France the combination of dark brown or black hair with grey or blue eyes is so frequently met with that it forms a leading characteristic of the people.

This peculiarity may be constantly noticed amongst the Bretons who throng the island every summer.

It will be observed that these Celtic districts are mostly in the mountainous, or in the remote and western districts of Great Britain and France, and these are precisely the parts of the countries concerned into which the inhabitants would be driven, or where they be least influenced and modified by invaders coming from the east. The pre-Celtic aborigines would be pushed back into them, or only slowly reached there by the Celts, and the Celts in their turn would retreat into them before the advancing Teutons.

As there are good grounds for believing that the pre-Aryan inhabitants of western Europe were of dark complexion, and as probably the original Celts were more or less fair, it seems reasonable to conclude that the dark complexion of the Celtic districts is an inheritance derived from the pre-Celtic stock, while the combination of dark hair and light eyes is a result of the mixture of the two races, or (and this I am disposed to believe), it may have been a characteristic of the true Celts. The prevalence of this combination in Celtic districts has been noticed by Barnard Davis and by Dr. Beddoe.¹

We may then accept as Celtic, or Celto-Aboriginal charac-

¹ On the Head Forms of the West of England. Dr. Beddoe in "Mem. Anthropol. Soc., London," vol. ii, p. 348.

teristics, dark hair and dark eyes, and dark or black hair with light eyes. Bearing in mind the neighbouring Celts of Breca, round-headedness and short stature would give additional evidential force to the dark complexion. Combined dark hair and light eyes may be found with any head form, mostly with dolichocephalic I think, however, and it is sometimes associated, as in the south-west of Scotland, with stature much above the average.

The Scandinavian and North German type is well marked and well known—tall and big-limbed, long-headed and fair, though amongst the Danes brachycephaly is not uncommon. From about the middle of the third century till the beginning of the eleventh, Southern Scandinavia and Northern Germany, that “Vagina nationum, et officina gentium” poured out a human flood over Europe. The Franks took possession of France, the Goths invaded Spain and Italy, and Jutes, Angles, Saxons, Norwegians, and Danes ravaged the coasts of Britain and France, formed settlements in many parts of Europe, and conquered England and Normandy. Indeed, in taking a general survey of Europe from an anthropological standpoint it seems as if a dark race had been driven back by a fair one, and that the original home of this fair people was the land from which the Teutonic races came, for in whatever direction we travel from this centre—east, west, north, or south—we find the complexion darker, and the proportion of round-heads increase.¹ There cannot be much doubt that the sea rovers visited Jersey; the very names of the islands testify to this, and most probably they established themselves there when they took possession of Normandy. A large portion of the Northern element in the population, however, would seem to have been acquired in a more peaceable way, by immigration from the neighbouring mainland in later times.

The following table, the result of my observations in Jersey, gives in percentages the colours of the hair and eyes, and the combinations in which they occur:—

Eyes.	Hair.					
	Yellow.	Light brown.	Brown.	Dark brown.	Black.	Total.
Blue or grey ..	0·40	11·29	20·50	15·08	2·69	49·24
Mixed ..	0·	1·25	11·39	10·04	3·70	26·38
Dark ..	0·	6·83	5·40	12·97	5·02	24·22
Total ..	0·40	13·37	37·29	38·07	10·81	

¹ On this subject see Penka, “Die Herkunft der Arier”; Virchow, “La race brune, et la race blonde en Allemagne Cong. Internat. d’Anthrop.” 1870; and Huxley, “Nineteenth Century,” November, 1890.

In order to bring out the evidence afforded by this table, some points in it will be compared with corresponding ones from other districts. These figures for comparison have been taken from the tables in Dr. Beddoe's valuable work, "The Races of Britain." But before doing so, it would be well to recall the fact that the "neuter" eye of Dr. Beddoe is not quite the equivalent of my "mixed" eye. As already explained, my "mixed" eye includes all in which grey or blue is in any way associated with brown, while Dr. Beddoe's "neuter" eye means all those which are neither distinctly dark nor light. I fancy many of my "mixed" eyes would be classified as "dark" by him. Also my "light-brown" hair is, I fear, if anything further from being the equivalent of his "fair." Many of my light browns would, I strongly suspect, appear under "brown" in his tables. All this tends to make the proportion of dark eyes appear lower and of fair hair higher in Jersey than they most probably would under Dr. Beddoe's system of classification. It will be noticed that red hair does not appear in my tables. Red haired persons are found in Jersey, but they are not very numerous, and it so happened that none of them were made subjects of examination when I was making my notes. Many of my subjects had a reddish tinge in the hair, more especially in the moustache or beard, but no case of distinctly red hair came under observation.

The case of the only yellow-haired person is interesting. This was a young lady whose yellow hair with a golden tinge, light violet blue eyes, and pink and white complexion at once struck me as having a northern origin. She had an old Jersey name, and she at first assured me that there was only Jersey blood in her veins. At a subsequent interview, however, she said that she had ascertained that one of her great-grandfathers was a Scotsman.

The following table gives the comparative figures:—

	Dark eyes.	Black hair.	Dark hair with light eyes.	Black hair with light eyes.	Dark hair with light eyes.	Fair hair.
Jersey	24·22	10·81	38·37	2·09	15·06	11·69
Celtic Districts—						
Penzance	33·4	16·6	42·2	3	16·2	10·2
Charmarthen	40·4	16	45·5	1·1	14·7	7·7
Morlaix	39·8	16·55	52·5	2·25	19·5	4·2
Quimper and Quimperlé ..	44·1	29·5	43·2	3·1	15·4	1·6
Upper Galloway ..	22·0	4·8	31·4	1·6	16·4	14·4
Central Highlands ..	12·8	3·7	29·4	2	17·2	19·2
Teutonic or Scandinavian Districts—						
Southampton	25·4	1·8	25·0	0·2	9·6	18·8
Boston	31·4	1·3	26·6	0·1	6·9	19·4
Caen	33·0	5·1	35·5	0·4	8·0	16·3

The figures from the first four places in England, Wales, and Brittany show the Celtic characteristics in a marked degree—the dark hair and eyes and the combination of dark hair and light eyes. The Jersey population it will be seen presents the same peculiarities: in a less degree so far as concerns darkness of hair and eyes, but quite as strongly with regard to the combination of dark hair and light eyes. Had Dr. Beddoe's classification been strictly adopted, possibly even in the matter of dark eyes and dark hair Jersey would have been nearer the others.

The Scotch districts have been placed beside the others as it is interesting to observe that in them dark hair with light eyes is as common as in the others, though the percentage of dark eyes is lower, and that of fair hair as high as in the Teutonic districts. Of course it is long since a Celtic language was spoken in Upper Galloway, but the inhabitants of that district still retain a large share of the blood of the Ancient Britons of Strathclyde. As a contrast, similar observations made in Southampton, Boston (Lincolnshire) and Caen are given. In these places the Teutonic or Scandinavian element is preponderant or large, and it comes out in the physical characteristics of the people.

The average cephalic index of the 239 persons whom I examined was 80·5. The lowest, much lower than any of the others was 67·8, and the highest was 87·5. There was little difference in head measurement between the fair haired and dark complexioned, the average in each being about the same. According to this the Jersey people are just within the limits of brachycephaly, or as 80·5 in the living head would be about 78 in the skull, they may be placed in Broca's mesaticephalic class. This Jersey average may be compared first with that of eighteen Bretons I examined and which I found to be 83·39, and secondly with the measurements given by various authorities. In doing so, it is to be borne in mind that my measurements are those of the living head, while in those given by authors, it is not always apparent whether the indices are those of the head with its integuments or of the bare skull. Owing to the thickness of the temporal muscles measurements made on the living head or on the skull covered with its integuments, give a higher index than those made on the bare skull. Broca says¹ that the subtraction of two units is required to reduce the one measurement to the other.

Topinard gives the following indices²:

Bretons, Côtes du Nord (Canton Gallots)	..	82·05.
Bretons, Côtes du Nord (Canton Bretonnais)	..	81·05.
Parisians, 12th to 19th centuries	..	79·45.
Normans of the 17th century	..	78·77.

¹ "Mémo. d'Anthropologie," vol. ii, p. 95.

² "Anthropologie," p. 245.

Dr. Taylor in his "Origin of the Aryans"¹ says, that the index of the Bretons is 84, and that of the Auvergnats 84, according to Broca, and 84·6 according to Durand. The average index of the round barrow British skull is 81 or 82.

The Teutonic or Scandinavian race with its various offshoots is dolichocephalic, and this peculiarity seems to have been much more distinctly marked in ancient times, when there was less mixture of blood. Fifty skulls in the museum at Stockholm have an average of 74·3² and the ancient German "Reihengräber" type has an index of 71 or 72. Gen. Pitt Rivers describes fourteen Anglo-Saxon skulls, which have an average index of 74·5.³ Dr. Barnard Davis⁴ gives 73 as the average index of eleven Anglo-Saxon skulls, and 76 as that of three ancient Scandinavian skulls. He also gives in a table the measurements of fifty skulls whose average index is 75, but though most of these were Anglo-Saxon some may have been of earlier date. Dr. Beddoe gives two tables of the head measurements—apparently of the living head—of the inhabitants of various parts of the British Islands.⁵ The average index of the one is 77·83, and of the other 77·47.

Topinard⁶ gives the average index of the English as 77, that of the Swedes as 75, and that of the Prussians as 78·9.

By far the greater part of the Ancient Britons, a Celtic speaking people, seem to have been dolichocephalic.

Pitt Rivers⁷ gives a list of twenty-four skulls from two Romano-British villages most of the inhabitants having been presumably Britons and the average index is 74·77. From this it is apparent that the cephalic index of the Jersey people is higher than that of Teutonic or Teutonised districts, and it may be concluded that this comparative broad-headedness is due to the Celtic element in the population.

The average height of the 110 males I examined I found to be 5 feet 7½ inches. The measurements cannot be entirely relied on, however, for many were made with the boots on, and others again were taken simply from the subject's own statement. But the height stated by the persons examined were likely to be more correct than might be supposed, for they had all, or almost all, served in the Militia. Though not to be entirely depended on, it is probable that my average is nearly the true one, though I

¹ Page 112.

² V. Ouhes, "Congrès Internat. d'Anthrop. et d'Archéol. préhist., 7^{me} Session, Stockholm."

³ "Excavations at Cranbourne Chase."

⁴ "Crania Britannica," pp. 248, 252, 253.

⁵ "Races of Britain," pp. 231, 232.

⁶ "Anthropologie," p. 246.

⁷ "Excavations at Cranbourne Chase."

am inclined to think that it is higher than it ought to be. Topinard¹ gives 1·710 m. or 5 feet 7·3 inches as the average stature of Scotsmen; 1·708 m. or 5 feet 7·2 inches, that of Englishmen, and 1·650 m. or 5 feet 4·17 inches, that of Frenchmen. The broad-headed dark Bretons are very short. The recruiting standard of the French Army is, or was, lately 1·560 m. or 5 feet 1·4 inches; and more rejections on account of insufficient height take place in Lower Brittany than in almost any other part of France. Edwards and Broca² say that their Kymri are much taller, in fact what may be considered a fairly tall race.

From the evidence that has been brought forward, it is apparent that the blood of the Jersey people is largely derived from the old Celto-aboriginal stock, and that this gives them physical characteristics resembling those of the populations of the other Celtic districts of Britain and France.

The Teutonic or Scandinavian admixture is not very large, as may be seen by comparing the figures in the Jersey table with those taken from the parts of Britain and Normandy where this element is strongly represented.

The aboriginal stock was no doubt that of the Celts of Broca, which has handed down its broad heads and dark complexions to the Bretons of to-day.

The Jersey people are not so dark as the typical Bretons, they are taller, and they are not so broad-headed. This difference is probably due to their having less of the aboriginal blood in their veins, and more of the Kymric or, what would ordinarily be considered true Celtic. Their Scandinavian blood would also tend to make them fairer and less broad-headed. The peculiar and interesting combination of grey or grey-blue eyes, with dark brown or black hair is about as frequent in Jersey as it is in other districts where "Celtic" blood predominates. It may be said, of course, that this is due to a mixture of the light-eyed and fair or brown-haired Celts or Teutons with the dark aborigines. It may be so, but it occurs so constantly as to give it the appearance of a racial characteristic. Besides this is not what usually results from a cross between persons of fair and dark complexions. When one parent has dark eyes and hair, and the other has blue or grey eyes and fair hair, it is generally found that the children are either like the dark parent, with dark eyes and dark hair—and this occurs, on the whole, most frequently—or they have hair of some shade of brown, with mixed eyes—this is perhaps next in frequency—or they are like the fair parent. Light eyes with

¹ "Anthropologie," pp. 329, 330.

² See Broca, "Mem. d'Anthrop.," vol. I.

dark hair is not commonly seen in the children of such parents, though of course it may and does occur.

It almost seems as if one of the ancient Celtic-speaking races, and that one of the most widely spread, had been characterised by this combination.

Speaking of Upper Galloway, where the people are generally very tall, the average height of the inhabitants of one parish being 5 feet 10·46 inches, Dr. Beddoe says,¹ "The prevailing combination of colour hereabouts is that of blue or grey eyes with dark brown or even black hair; the last is very common about Lesmahagow, which is a sequestered hilly district; on the whole the tallest men seem to be the dark-haired ones. Probably the primitive Brythons of those parts:—Ottadini, Attacotté, &c., were tall, grey-eyed, and dark-haired. One is reminded of the Britons whom Strabo saw at Rome, who were half a foot taller than other people. Strabo also says that the Britons were not so light-haired as the Gauls."

A summary of the conclusions at which we have arrived may now be shortly given.

The population of Jersey derives its blood almost entirely from three sources; it has, as it were, three layers of origin, one superimposed on the other.

First, there was the short, dark, broad-headed aboriginal race of Central France and Brittany, which probably occupied the Channel Islands as well.

Next came the Celts, or if we like, we may call them Kymri, reserving the name of Celts for their predecessors. They were probably tall, with grey or grey-blue eyes, and fair or brown hair, or some of them may have had grey eyes and dark hair. These two elements, the aboriginal and the Celtic, enter most largely into the composition of the present truly native population of Jersey.

Lastly, we have the Teutonic-Scandinavian admixture, chiefly of Saxon, Danish, and Norwegian blood, which came long after the Celtic, and forms a considerably smaller ethnological constituent than the earlier Celto-aboriginal one.

It is much stronger, however, than in Brittany, in most parts of which indeed, there seems to be little or none of it, and it appears to be greater than in Cornwall or Wales.

NOTE.—I am told by the Adjutant of one of the Militia regiments that he thinks my estimate of the average stature of Jerseymen is too high. He would make it from half-an-inch to an inch lower. No records are kept, however, of the measurements of height.

¹ "Races of Britain," p. 240.

POINTS OF CONTACT between OLD WORLD MYTHS and CUSTOMS
and the NAVAJO MYTH, entitled "The Mountain Chant." By
A. W. BUCKLAND.

THE very curious myth of the Navajo Indians of New Mexico, entitled the myth of *Dilyidje Qaeđi* (Reared within the Mountains) or "The Mountain Chant," with the rites and dances in connection therewith, as given at great length in an elaborate paper by Dr. Washington Matthews, in the fifth annual report of the Bureau of Ethnology (Smithsonian), contains so many points suggestive of contact with Eastern civilization that it appears to me especially worthy of the attention of Anthropologists.

The Navajos, it may be remarked, now occupy territory adjoining the Zunis in New Mexico, but are supposed to have come from much further south. They are at present advanced in the arts of metallurgy, pottery, and weaving; but the myth, and its ceremonial songs and dances, take us back to a time when stone implements of a very early type were in use, for the hero and his brother are represented as chopping down poles for their hut or wigwam with a grooved stone axe, round which they twisted a flexible twig of oak, tied together with the fibre of the yucca, with which rude implement they chopped all day in order to obtain four poles; they used a digging stick to dig for water, trapped small animals with stone traps, and when they caught them, pounded them up, bones and all, with seeds of grass and other wild plants, and boiled all together in an earthen pot. They do not appear to have had any domestic animals, as not even a dog is mentioned, and there were no horses.

The father of these young men seems to have been a medicine-man or magician, for after a ceremony of purification by sweating, in a house built of certain trees, and carpeted with plants on which deer browse, he sent them out to hunt, and to bring the slain deer to him. Of the head and skin he makes a lure for the deer, such as is now used by many Indian tribes, but which was at that time apparently unknown, and then, hanging the pluck in a mountain-mahogany tree, he bids the eldest son, the hero of the myth, shoot at it, himself holding the son's hands and guiding the arrow; then blowing upon his son towards the pluck, he tells him, "Now, whenever you want to kill a buck, even if there is neither track nor sign of deer in sight, you have only to shoot into the mountain-mahogany, and you will find a dead deer wherever your arrow

strikes." Here we get that magic arrow which appears so often in Eastern myth and folk-lore, and which, in the hands of the King of Israel, guided by those of the dying prophet, was used to prophecy the defeat of the Syrians. The son then armed with magic weapons, goes forth to procure game, but is forbidden to go to the south, a prohibition which he disregards, and so falls into the hands of his enemies, the Utes, who are on the point of putting him to death, when he is rescued by the wind-god, who uses as his messenger an owl, or rather, as is explained, a figure wearing the mask of an owl, and this owl-headed divinity accompanies the hero in most of his subsequent adventures, leading him into caverns, the entrance to which he enlarges by breathing upon them. Twenty of these houses or caves are entered, and their inhabitants described: they are sometimes birds and animals, and sometimes men in the form of animals. It would be impossible to describe all these, but two or three are especially noticeable.

In the house of the bush-rat is the first notice of that curious and widespread taboo with respect to eating in the under-world, or abode of the dead, known to classical readers as the myth of Persephone, but which, with slight modifications, appears in the folk-lore of almost all races.

In the present instance, the wife of the bush-rat offers the hero husks and rubbish for food, but the wind-god¹ whispers to him to ask for some of the contents of two jars which are filled with good nuts and berries, yet, when these are given, the voice of the wind-god says "Eat not of the food of the rats in the home of the rats, if you would not become a rat; wait till you go out to-night." This same prohibition is repeated four times—in the house of the rats, the bears, the porcupines, and the squirrels, but in the case of the latter the taboo extends only to nuts, and he is allowed to eat service-berries.

The object of all these visits to gods, and to men in animal form, is to receive instruction in the rites and ceremonies which he is afterwards to teach to his people.

Thus, in several visits, pictures are shown him, drawn upon the clouds, which he is to copy in sand, and he is taught how to make certain sacrificial sticks, which have to be painted and buried with much ceremony; how to paint, dress, and prepare the messengers sent to summon people to the games and dances; how to make and swallow, or pretend to swallow, plumed arrows; things which appear to me to be unique in the ritual of uncivilized races, and which, although they may seem to

¹ The connection of the owl, or of the wind-god in the form of an owl, with this food prohibition is noteworthy, since, in the classical legend, Ascalaphus, who saw Persephone eat the pomegranate, was turned into an owl.

us trivial and unmeaning, are regarded by the Navajos as of immense importance.

The visit to the house of the Great Serpent deserves especial notice. The name of the locality is particularly suggestive: it is called "The Circle of Red Stones," and the entrance is a hole in the rocks guarded by two rattlesnakes, and covered by two piñon trees for a door. These trees move of their own accord, and the rattlesnakes hiss and thrust out their tongues, but do not bite the hero, who, led by the wind-god, enters the cavern, to find himself in the presence of a bald-headed old man, having a little tuft of hair over each ear. This is the Great Serpent, who shows the Indian how to make the sacrificial sticks of the Great Serpent, and how to plant them. He then proceeds to the house of the Lightning, where he is threatened with destruction by thunder-bolts and lightning, but he escapes and enters a house of black clouds, which is the house of the Lightning, where he finds the lightning-god, bald like the Great Serpent, with only a little tuft of hair over each ear, the room being illuminated by four lightning birds, who flash coloured lightning from their talons.

Dr. Brinton regards the serpent and the lightning to be identical in Indian mythology, but in this Navajo myth they are evidently separate gods, although closely allied, both being described as bald-headed, with small tufts of hair over the ears, a peculiarity which is deserving of notice, because, unless I am much mistaken, the Japanese dragon is often thus represented, and this particular method of shaving the head is a ceremonial usage both in Japan and among the Red Indians.

In Japan we are told that "on the fifteenth day of the eleventh month of the third year, the child's hair is cut. Up to this time the whole head is shaven, now three patches are allowed to grow, one on each side and one at the back. During the ceremony the child is placed facing the point of the compass auspicious for the year," and it is further observed that the head is covered with cotton, with an end hanging down behind, to which is attached a piece of fish,¹ thus giving a totemistic meaning to the ceremony, similar to that in use among several tribes of Red Indians. Among the Omahas, for instance, the hair-cutting ceremony is performed by the keeper of the sacred pipes, who receives presents for his part of the ceremony, which consists of cutting the first lock, tying it up and placing it in a sacred buffalo hide, the father concluding the ceremony by cutting the rest of the hair, leaving two or more tufts, in accordance with the totem of the gens to which

¹ "Tales of Old Japan," A. B. Mitford.

the child belongs, and it is noteworthy that this ceremony, as in Japan, takes place in the child's fourth year.¹

The reverence for the cardinal points in both cases is also deserving of notice. In the myth we are considering, the cardinal points appear to be the chief objects of worship; everything is arranged in reference to them, the east being chiefly honoured, and a special colour being assigned to each. This, however, is not peculiar to the Navajos; in almost all Indian tribes the number four is sacred, and the cardinal points are denoted by different colours. Among the Navajos these colours are white for the east, yellow for the west, black for the north, blue for the south; whilst, among the Zunis, the east is white, the west black, the north yellow, and the south red. This variation in the colours adopted by different tribes, causes a difficulty in the interpretation of coloured symbols; but it is evident that a similar symbolism existed in ancient Mexico, and that the sign of the cross, which appears so frequently in Mexican and Central American pictures and sculptures, denoted the cardinal points, and perhaps the winds blowing from them.

Returning to the myth, we find that after the hero has been duly instructed in the religious and medicinal rites and dances, which he is to introduce, he is sent back to his own people, but finds his father's lodge insupportable until he has undergone a ceremony of purification so-called, prescribed by a shaman in order to remove the effects of the strange food he had consumed in his wanderinga. After this, he spends four days and four nights in relating his adventures, and then the first ceremony in accordance with the new rites takes place, other tribes being summoned to attend by swift runners, dressed according to the fashion prescribed by the butterfly-gods of the myth. At this assemblage of tribes, we find races run for very heavy stakes introduced, in which the Navajos being victorious, win great wealth, consisting of strings of coral, turquoise and shell beads, large vessels of shells, beautifully tanned buckskins, dresses embroidered with porcupine quills, and suits of armour made of several layers of buckskins, now no longer worn.

Soon after this, the apotheosis of the hero takes place, under circumstances reminding one of that of Elijah. He takes his younger brother to the Black Mountains—"And as they sat

¹ In Lands's account of the ceremony of baptism in Yucatan, we are told that the children (boys) of the age of three, who came to be baptized, had something white fastened among the locks at the back part of the head; this, at the ceremony, was cut off by the priest with a stone knife. See "Omaha Sociology," by Rev. J. Owen Dorsey, Smithsonian Report, 1881-2.

there Dailyi Neyāni¹ said, 'Younger brother, behold the holy ones,' but the younger brother could see no one. Then he spoke again, 'Farewell, younger brother! From the holy places the gods come for me. You will never see me again; but when the showers pass and the thunder peals, 'There,' you will say, 'is the voice of my elder brother,' and when the harvest comes, of the beautiful birds and grasshoppers, you will say, 'There is the ordering of my elder brother.'"

As he said these words he vanished. The younger brother looked all round, and seeing no one he started for his home. When he returned to his people he told them of the departure of Dailyi Neyāni, and they mourned as for one dead.

The ceremonies instituted in accordance with this myth, and which are undertaken chiefly for healing the sick, are described at great length by Dr. Washington Matthews, and it would be impossible to follow them. Every part is full of mysterious meaning. The lodge erected is sacred, so also is the great corral surrounding the space set apart for the dances, and known as "the dark circle of branches"; this is reared to the chant of the shaman, an opening being left in the east, and which must not be entered except by walking round it to the left; the fire kindled in this corral, within which dances resembling the Australian corroborees take place, is made of sacred wood of four kinds. Special seats are assigned to the performers and to the guests, and even the food of the assistants is prepared in a particular and primitive manner, the bread or cake being made and baked in an earth oven or hole in the ground. In cutting the sacrificial sticks, which seem to have a peculiarly religious significance, a flint knife is used. The rattle and the whizzer, or bull-roarer—the latter made only, it is said, of a pine tree struck by lightning—are the sacred instruments to accompany the songs and prayers, and a sacred medicine prepared with much ceremony is drunk, not only by the patient, but also by the shaman and the spectators. *Massage* is freely used, and the sacred sticks, arrows and other substances, are pressed to various parts of the body, and held in the hand of the patient. One of the most singular parts of the performance is the sudden appearance of a man covered with evergreens, resembling our Jack-in-the-Green, and still more the Duk-duk of the South Sea Islands. This apparition appears to have a mesmeric effect upon the patient, who is thrown into a trance, from which the shaman rouses him or her by whistling and massage.

That, however, which is most distinctive in this ceremony,

¹ This name signifies "Reared within the Mountains," and appears to have been assumed by the hero in the course of his adventures, and retained by him ever after.

and which appears to me to be unique, is the making, on the ground, of immense sand-pictures, one being made each day for four days, and erased the same day. Every part of these pictures appears to be most carefully designed, and drawn with the greatest attention to the most minute details, the colours of the cardinal points are strictly adhered to, and they are commenced and erased in a particular order.

The first picture represents eight rattlesnakes crossed in pairs, and surrounded by four others stretching across the ends of the picture facing the cardinal points, with a mountain surrounded by a rainbow in the west, the wind-god at the north-east corner, and in the centre of the picture a bowl of sacred water, also surrounded by a rainbow. The second picture, which is the most complicated, represents four *yays*, or gods, standing upon rainbows, with their feet towards the sacred bowl in the centre, and their heads towards the cardinal points, and between each a sacred plant conventionally represented; the whole is surrounded by an anthropomorphic rainbow, which is apparently a female divinity among the Navajos, as it is represented with a square head, which Dr. Matthews says is the feminine symbol. Each god bears in his hand various symbolic devices, one being a forked stick, which I regard as appertaining to divination, another is evidently the sacred medicine-bag of the shaman, whilst the third is the mystic *sacastika*, which is here evidently formed of the plumed arrows of the myth, and has a reference to the sun's course, two being borne high up in the heavens, and two low down. Of the other two pictures, one represents four goddesses, who are so very tall that they are adorned with four petticoats, one above the other, because they say no one garment could be made long enough for them; and the other represents the eight sacred plumed arrows, with reddened flint heads, which are supposed to be swallowed in the ceremony.

The other unique rite of this very remarkable ceremony, consists in the manufacture and burial of the several sacrificial sticks, in accordance with the instructions given to the hero of the myth by the several animal-gods; these are most carefully painted to represent the animal to which they are sacred, and some are adorned with feathers and beads; they are then buried in particular and prescribed positions; they appear to resemble the message sticks used by the Red Indians and by the Australians, but I do not remember to have seen any notice elsewhere of the burial of such sacred sticks, except one very curious instance of a similar English custom, given in the Ashmole MSS. (1406), and quoted in Hazlett's "Fairy Mythology of Shakespeare" (p. 276), written about 1600; this is a "Conjuration for Fairies."

"First gett a broad square cristall, or Venus glasse, in length and breadth three inches. Then lay that glasse or cristall in the bloud of a white henne, three Wednesdays or three Fridays. Then take it out and washe it with holy *aqua* and fumigate it. Then take three hazle stickes or wandes of a yeares growth, pill them fayre and white, and make soe long as you write the spirit's name or fayries name, which you call, three times on every sticke, being made flatt on one side. Then bury them under some hill whereras you suppose fairies haunt, the Wednesday before you call her; and the Friday followinge take them uppe and call her at 8 or 10 of the clocke, which be good plannetts and howres for that turm. But when you call, be in cleane life and turne thy face towards the East."

Among the dances which conclude the great Navajo ceremony, some are weird and picturesque, some quaint and absurd, some apparently obscene, but all appear to have a religious and symbolic meaning, although intermixed therewith may be found a great deal of trickery, some broad clownish fun, and some clever jugglery. In one instance, the well-known East Indian trick, of causing a plant to spring up, grow and bear fruit, is introduced, the yucca being substituted for the mango. A hundred and sixty-one songs of sequence are given by Dr. Matthews as belonging to this ceremony, the recitation of which is governed by many rules.

Colonel Powell, in treating of this ceremony, says it is only one of seventeen known to survive among the Navajos, each lasting nine days, and he says, "This myth exhibits the stage in mythologic philosophy in which zoötheism and physitheism are both represented. In it the phenomena of nature are the work of animal gods, but these gods are becoming anthropomorphic," and he points out a strong resemblance between this myth and some noticed by Schoolcraft as existing among the Algonquins and Iroquois. In many points there is a strong affinity to Zuni myths and ceremonies, and among the Zunis we also find the sand-pictures, although they do not seem to have the same religious significance. Religious pictures of a more permanent character appear among Col. Garrick Mallery's "Pictographs of the North American Indians," one of which is reported as having been seen among the natives of New Holland, as used by them in connection with a corrobory or solemn religious ceremony. "It has for its form the most curious painting upon a sheet of bark, done in various colours of red, yellow, and white ochre, which is exhibited by the priest."¹ In the Navajo pictures the pigments employed acquire extraordinary sanctity and healing power. The patient is seated upon certain prescribed portions

¹ "Journal of Royal Society of New South Wales," vol. xvi, p. 167.

of them, and the parts of his or her body affected, are rubbed with the sand from similar portions of the bodies of gods portrayed, whilst the spectators eagerly possess themselves afterwards of the sacred sand, to apply to their own ailments. The anthropomorphic rainbow, the lightning and sunbeams, are always represented, for these are the roads by which the gods travel, and in the myth, the hero, accompanied by the wind-god, walks upon each, after the wind-god has solidified them by breathing upon them.

That which strikes me as of special interest in this Navajo myth, and the ceremonies depending upon it, is the absence of everything even symbolical of the shedding of blood. There seems to be no cutting of the person, no slaughter of victims of any kind. The so-called *sacrifices* are simply sticks painted, adorned with beads and feathers, buried not burnt, possessing, doubtless, a symbolical meaning difficult of interpretation; but there is no blood used in the decoration of them, they are not even, like the English fairy-sticks, steeped in the "blood of a white henne"; their nearest equivalents seem to me to be found in the Japanese Go-hei, which originally, we are told consisted of offerings of cloth or hemp tied to rods or twigs, the name signifying "august offerings," and it is only of late years that paper has been substituted for cloth.

Many features in the Navajo ceremonies seem to point unmistakably to the East, and especially to Japan, where we find the purification by sweating, the ceremonial hair-cutting, the myth of Persephone, or prohibition to eat the food of the underworld, which, however, is a myth which seems universal, being known among the Ainos and New Zealanders, and appearing in many European fairy tales. The conjuring trick of the growing plant is decidedly Asiatic, whilst the reverence for deceased ancestors, and for the cardinal points, and the histrionic character of the Navajo ceremonies, certainly point in the same direction, although these are things which may have originated in more places than one. In a former paper I pointed out the curious identity between carvings in America, New Zealand, and the South Sea Islands, as described and figured by Mr. Dall, in his very important paper on "Masks and Labrets," and I also showed the similarity, amounting almost to identity, between the symbols on engraved shells found in American mounds and those painted on the sacred drum of Japan; to these may be added the *sacstika*, which appears alike engraved on Japanese bronzes, and portrayed in the Navajo sand-pictures.

The bloodless Navajo rites seem also much more in accordance with those of China and Japan than with the well-known extremely sanguinary ceremonies of the ancient Mexicans.

who were geographically their near neighbours, and from whom it might have been supposed they would have derived something both of myth and ceremonial, but although there is a certain resemblance in the reverence for the cardinal points, and in the colours used to express them, as also in sun and serpent worship, &c., there seems absolutely nothing in common, even in the form of survival, between the human sacrifices, the scarification of ears and piercing of tongues, the making and smearing with blood of the hideous idols of Mexico and Central America, and the harmless painted sticks and sand-pictures of the Navajo myth, and it is also noteworthy that the gods portrayed in the sand-pictures, are totally unlike the squat, grotesque Mexican figures, being characterised by slenderness and length, whilst the ornaments are few and simple, and the faces, whether round or square, being always full face and never in profile.

How two religions so diametrically opposed, could have originated spontaneously in contiguous regions and among a homogeneous race, is a problem to be solved by those who believe in the indigenous origin of American culture. For myself I have always held that American civilization was partially a foreign product, in accordance with native traditions, and this Navajo myth appears to me to point unmistakably to some connection between the Eastern and Western hemispheres prior to the time of Columbus; but, as Dr. Matthews says, the system of worship to which this myth belongs "might profitably occupy for years the best labour of an earnest student to elucidate."

Since writing the above I have come across two notices which seem to bear somewhat upon the subject. Miss Gordon Cumming, in her "Two Happy Years in Ceylon," speaks of a painted stick being carried with great ceremony in the procession of the *Perehara*, before which the people bow down and worship, the stick being adorned with strings of flowers and partly concealed in silk brocade. Again, she says, "A young tree is cut down, divided into four, and erected as pillars in four temples, the bows and arrows of the gods being carried round these pillars daily during the *Perehara* on four elephants. The *Perehara* lasts from new to full moon, and at the full moon four priests, bearing four swords of the goddesses, attended by four assistants bearing golden water vessels, containing water drawn just a year before, row some distance up the river and await the first streak of dawn, when suddenly the four priests strike the water with their swords, describing a magic circle in honour of the sun, and at the same instant the attendants empty the water vessels and refill them from within the magic circle drawn by the swords." Here we have the constant repetition of four as the

sacred number, with evident reference to the cardinal points, whilst the circle drawn by the swords of the four priests, seems to be the origin of the cross within the circle and of the Swastika which, in Asia as in America, symbolizes the cardinal points and the path of the sun. The sacred water taken from within this circle would appear also to be represented in the bowl placed in the centre of the Navajo sand-pictures, surrounded by sun-beams.

The second notice is in a paper by Henry B. M'Dowell, on "A New Light on the Chinese," which appeared in "Harper's Magazine" for December last, in which is recorded the belief of the Chinese in colour, especially red, and mention is made of the custom of erecting a door or sun-gate in the middle of the room on a child's birthday, through which he is carried by the priest, who goes through the same ceremony at each point of the compass, this ceremony being repeated every birthday till the child is sixteen, evidently the multiple of the sacred number four. There is also a reference to the Shinto religion of Japan, in which it is said that pilgrimages are made to the shrine of Isé, where *wands*, or *harai*, are procured by every true believer. On arriving home these symbols of growth are placed in the *kama ama* shelf of the gods.

NOTES ON SOME MINOR JAPANESE RELIGIOUS PRACTICES.*

By BASIL HALL CHAMBERLAIN.

[WITH PLATES XXIV, XXV.]

[Read June 21st, 1892.]

STRAY notes pointing nowhere in particular can scarcely ever be much to an investigator's taste. Far more interesting it is for him to develop some definite theory which he can illustrate and prove, at least to his own satisfaction, to write something which has, so to say, a beginning, a middle, and a logical end. Unfortunately for me, fortunately perhaps for you, my pilgrimages to many scores of Japanese shrines, during the last nineteen years, have left me with no particular theories, but only with many pleasant memories, and a miscellaneous assortment of paper charms and other objects of popular devotion, representative specimens of which are exhibited here to-night. Mr. Lafcadio Hearn, too, the most conscientious of all present students of Japanese folk-lore, has kindly contributed to the

¹ The illustrations are taken from objects presented by Mr. Chamberlain to the Pitt Rivers Museum at Oxford.

little collection. He has contributed both actual articles and explanations of the ideas connected with them, and much of what is here said must be looked on as resting on his high authority.

Here, for instance, are two little sections of bamboo sent by him from the Shintō shrine of Yaegaki, in the province of Izumo, which skirts the coast of the Sea of Japan, a portion of the country, which, though classic ground to the Japanese mythologist, is scarcely ever visited by Europeans. The things themselves are not much to look at, but the following letter, in which they came wrapped up, should make them interesting in the eyes of all anthropologists and students of folk-ways:—

"These are from Yaegaki, but are not absolutely peculiar to that place. The peasants of Izumo carry offerings of sea-water in them from the coast to Yaegaki, and there attach them to the gratings of the shrine, together with offerings of seaweed. I am told a part of the water is drunk by them after having been offered; but I am not quite sure if this is a general practice. You may notice there are two; one, I suppose, for Susa-no-o (the chief deity of those parts), the other for Inada-hime (his wife). I saw the same practice at the temple of Inasa, at Kitzuki, but there the water was carried in a gourd, or in a bottle. At Yaegaki the offerings are not always of double, but commonly of single bamboo water-vessels. There are a great many hanging there. On application yesterday, the priest detached these for me from the door of the shrine."

The next object is from the same part of the country, but Buddhist. It is called a *hangi*, or more vulgarly *hanko*, that is, a printing-block. Its use is stated by Mr. Hearn as follows: "When a child dies, the mother prints with this a hundred copies of Jizō's image, and drops them into a stream with the invocation, *Namu Jizō, Dai Bosatsu* [Hail! Oh! Jizō, great Saint!], sometimes adding in writing on each paper, 'for the sake of . . .'. Jizō, be it explained—the Sanscrit *Kshitigarbha*—is the superhuman helper of those that are in trouble, especially of dead children. His image is to be seen in every part of Japan, loaded with pebbles, which serve in the other world to relieve the labours of infants who have been robbed of their clothes by the hag named Shōzuka no Baba, and have been set by her to perform the endless task of piling up stones on the bank of the Buddhist Styx.

A tiny symbol of devotion, to be seen scattered all over the Izumo fields, is the little *Nobori*—perhaps one might translate the term by "prayer-banner" in English—each of which typifies the granting of a prayer. The *nobori* are specially

common in the neighbourhood of Shintō temples. At the great temple of Izumo (*Izumo O-Yashiro*) "they are," says Mr. Hearn, "countless, making a white line round the base of the great buildings." Sometimes leaves of the sacred *Sakaki* tree (*Oleyera japonica*) are fastened to the top of the prayer-banner. A far more showy object sent from Izumo by Mr. Hearn, but unfortunately too unwieldy for transportation to England, is the *shōryō-bune*, or "spirit-boat," which is an elaborate construction of straw, shaped so as to form a straw model of a boat and used in somewhat various forms in different parts of Japan on the occasion of the *Bon Matsuri*, or Buddhist "Festival of the Dead." A short description of the Nagasaki variety of this custom will be found on page 381 of the 3rd Edition of Murray's "Handbook for Japan." In Izumo the custom differs. There the "spirit-boats" are launched only for those who have been drowned at sea, and the shapes of the ships vary according to the kind of vessel in which the lost man or woman perished. They are launched every year for ten years after the death commemorated; and when the soul returns yearly to visit the house, the ship is made ready, and a little stick of incense is lighted before launching it to take the beloved ghost back again, a little stock of provisions, chiefly *dango* (a sort of rice-cake), being placed upon it on small earthenware saucers.¹ The posthumous Buddhist name² of the dead is written upon the sail. Then these boats are launched, not at night as elsewhere, but in the day-time."

Of a more cheerful symbolism is the accompanying small paper, wood, and clay representation of a united loving couple, one body, or rather one suit of clothes, with two heads (the latter unfortunately broken). It comes from "the old Shintō shrine of Yaegaki, where lovers pray for help to Susa-no-o and his deified human spouse, in a grove which is very solemn, shadowy, and beautiful. All kinds of curious customs are observed by the pilgrims, such as tying a strip of paper, inscribed with the name of the beloved, round two twigs so as to press them together. But the tying must be done with only the thumb and little finger of one hand." A practice followed by lovers, at another Shintō temple, is to throw little pellets into a pond. If the newts at once rush to seize the pellet, the omen is good, whereas if they do not do so, the omen is bad.

Apropos of these, one may perhaps mention the strips of paper which pilgrims to Buddhist shrines chew into pellets and then spit out at the *Ni-ō*, or gigantic images of the guardian deities of the temples. If the pellet sticks, the pilgrim's prayer will be heard. If not, the prayer will not be heard.

¹ Japonice, *Kawarake*.

² Japonice, *Kaimyo*.

Of miscellaneous minor religious practices, the name is legion. Such are the sprig of holly stuck to a doorpost to keep out evil spirits, the imprint of a hand over the door or entrance to a house, and similarly the rude picture of a horse pasted up over house-doors to avert small-pox. What may be the *rationale* of this I know not, having neglected to ask, but Mr. Aston, in a private communication, suggests that the horse may be intended to hint to the evil spirit that the family is abroad. Another curious practice is that of depositing on some mountain-top the instrument with which a crime has been committed. Till within a few years ago Nantai-zan, a high summit in the Nikkō district, now the happy hunting-ground of "globe-trotters," was littered with swords that had thus been offered to the mountain god. Or, leaving the land for the sea, how touching is the sailor's habit of scattering grains of rice on the waves as an offering to Kompira, or some other deity with power to still the billows. This practice I had never heard spoken of, but I witnessed it a few years ago when taking junk from Vries Island, off Eastern Japan, to return to the mainland. Indeed the only satisfactory way to get at such things is to go out oneself among the common people, and live with them as a friend, not asking leading questions—for these create distrust, and oftentimes produce false answers—but watching, while seeming not to watch, and behaving as if all that goes on were both rational and already well-known, in fact a matter of course. The queer little practices, the quaint little odds and ends of inconsistent beliefs are simply endless. For think a moment of Shintō, Buddhism, Confucianism—one an ethnic cult, the second an ethical and highly metaphysical Indian creed, the third a Chinese system of philosophy and government. The Japanese have had for centuries these three living alongside of each other, interpenetrating each other, believed in simultaneously, more or less, by the same people, not mutually exclusive, as they ought logically to be, and as they certainly would have been in this earnest, disputatious, persecuting Europe of ours. Add to this the consideration that Buddhism was already centuries old and extremely corrupt when introduced into Japan, that it brought with it a whole museum of Chinese superstitions on the top of original Indian beliefs and practices, themselves the slowly accumulated legacy of a hoary antiquity, and no one can wonder at finding realised in Japan the paradox of religious indifference resting on wealth of superstitious lore.

These, together with an accurate description of Japanese religious practices at large, must be left to someone having the knowledge and the patience to write a folio tome on the subject.

Let us confine ourselves to that single branch which the articles exhibited to-night chiefly illustrate, viz., pilgrims' charms.

Pilgrimages have been a recognised institution among Japanese Buddhists from the very earliest times of Japanese Buddhism, the practice having already been in full force among the Buddhists of China, and before that again in India.

Sometimes it is a single shrine that forms the attraction, each neighbourhood generally having one or more within easy reach to which local piety ascribes almost unlimited sanctity. Another variety is the catena, or set of shrines, to visit which in proper rotation constitutes one complete pilgrimage. The two most celebrated of these greater pilgrimages are what are termed the "Thirty-three Places" (*Saikoku San-jū-san-ga Sho*) and the "Eighty-eight Places" (*Shikoku Hachi-jū-hak-ka Sho*). The former are thirty-three shrines sacred to Kwannon, the Goddess of Mercy, which are scattered over the provinces near Kyōto. The latter are eighty-eight shrines in various parts of the island of Shikoku, founded by the great ninth century saint, Kōbō Daishi. These two groups of shrines are also called by the curious name of *Fuda-sho*, that is, "Card Places," because the pilgrims leave their cards with their name and address at each shrine, pasting them up on the doors or pillars of the temple.

Just as a specimen of such Japanese religious tales, the story of the origin of the "Thirty-three Places" may here be given:—Legend traces the institution of these "Thirty-three Places" to Tokudō Shōnin, a famous Buddhist abbot of the eighth century. This holy man, having suddenly died, was received by two emissaries of Yama, the god or regent of the underworld, and conducted to the latter's iron castle that glitters with gold and silver and with pearls and every kind of precious stones.

The god, himself resplendent as a jewel and beaming with smiles, received the dead abbot with distinguished attention, and forthwith revealed to him the existence of three-and-thirty places specially cared for by the Goddess of Mercy, saviour of the world (*Guse Kwan-ze-on*), who had thus divided herself into many bodies, wishing to succour each of mankind in the way best suited to his particular spiritual antecedents. But alas! none yet knew of the existence of these shrines; so men went on doing evil rather than good, and kept falling into hell as plentifully as the rain drops in a furious summer shower, whereas a single pilgrimage to the "Three-and-Thirty Places" would cause the pilgrim to radiate light from the soles of his feet, and give him strength to stamp all the one hundred and

thirty-six hells into fragments. "Should anyone peradventure fall into hell that has accomplished the pilgrimage," said Yāma, "I, myself, will exchange with him, and suffer in his stead, as a teller of false tales. Here, therefore, is a list of the Three-and-Thirty Places. Carry it back to the world of the living, and do the needful in the matter. It was for this purpose that I sent for thee hither." Tokudō thanked the regent of the underworld for his kindness, but remarked that mortals had grown sceptical in these latter days, and would ask for a sign to accredit his embassage. Thereupon Yāma gave him his own jewelled seal, and the abbot was led back by the same two attendants as before to the sinful world.

Now what had happened there was, that though he had lain as dead for three days and three nights, his body had not grown cold. His disciples therefore had refrained from burying him, thinking that he might possibly be restored to life. When he did awake from the trance, there, grasped in his right hand, was the seal, which the regent of the underworld had given him. Then he told his disciples all that had happened, and he and they started off on a round of the Three-and-Thirty Places, as the first pilgrims to those holy shrines; and as the oldest temple in Japan dedicated to the Merciful Goddess was that of Nakayamadera in Setsu, which the Prince Shōtoku Taishi had had built, they visited that first. There also did he leave the jewelled seal in a stone casket.

So far the legend. The dress worn by the pilgrims who visit the Thirty-three Holy Places is here shown (Plate XXIV, A), as also that worn by the pilgrims to the Eighty-eight Holy Places of Shikoku (Plate XXIV, B). Differences of detail distinguish one costume from the other. Thus the pilgrims to the Thirty-three Places wear round their necks a necklace formed of wooden tickets, each of which is inscribed with the name of a shrine and the traditional verse of poetry celebrating the shrine. This sort of necklace is now going out of fashion in religious circles, and the diminutive ladle, or dipper, formerly carried as a receptacle for alms, is no more seen; but the *tataki-gane*, or miniature gong, is still used as an implement of religious worship, which the pilgrims strike in unison as they sing. But by far the most important item in the costume of the pilgrims to the Thirty-three Places is the *oizuru*, a sort of coat, or should one rather call it jacket?—which is successively stamped with the seal of each shrine. The three breadths of material used in the sewing of this holy garment typify the three great Buddhist deities—Amida, Kwannon, and Seishi. The garment itself is always carefully preserved after the return home, and when the owner dies he is clad in it for burial.

The pilgrims to the Eighty-eight Holy Places of Shikoku are chiefly to be distinguished by the *shiri-tsube*, a little cloth to sit on, which anciently formed part of the simple luggage of all wayfarers, by the *fuda basami*, or double thin wooden board serving to hold their visiting cards, and by a small straw sandal worn—of all extraordinary places—at the back of the neck. It is intended to symbolise that great saint and wayfarer, Kōbō Daishi, by whom the pilgrimage was instituted. Perhaps the quaintest detail of the costume of both sets of pilgrims is the inscription on the hat, which runs thus: *Two* pilgrims travelling in company to such and such shrine.¹ Why should one hat have a reference to two persons? The idea is that, the pious pilgrim is never left alone. The great saint Kōbō Daishi, or the Goddess of Mercy, as the case may be, travels with him along the stony path, supporting his footsteps, encouraging his religious fervour, guarding him from evil all along the way. Therefore not one only but two walk under that broad-brimmed hat on the road to Paradise.

It may be asked what it is that the pilgrims say when performing their devotions. The formula—supposing the Goddess of Mercy to be addressed—is *Namu dai-ji dai-hi no Kwan-ze-on Bosatsu* ("Hail! Bodhisattva, of great mercy and compassion, who regardest the prayers of the world!")—to which will be added some brief extempore prayer or thanksgiving. Sometimes a sūtra, entitled the "*Fumon-Bon*," is recited in Chinese and without being understood, somewhat after the fashion of an incantation or talisman, or else a shorter Chinese text, entitled "*Kwannon Juk-ku*," or "The Ten Sentences of the Merciful Goddess." But the most noteworthy feature of the worship of the pilgrims to the Thirty-three Shrines is the intoning of the poem (Jap., *go eika*) in honour of the shrine, there being one poem for each of the Thirty-three Holy Places.

Japanese poems are distinguished by extreme brevity, each consisting of but five lines, which contain but thirty-one syllables all told. The pilgrim's hymns form no exception to this rule. Here are two or three specimens from the cycle of the Thirty-three Places:—

*Fudaraku ya
Kishi uzu nomi wa
Mikuma- no no
NACHI no mi-yama ni
Hibiku taki tsu se!*

¹ In Japanese it runs thus for the Thirty-three Shrines, *Shikoku San-jūsan Sho dōgyō ni-nin*; and for the Eighty-eight Shrines, *Shikoku Hachijū-hakka Sho dōgyō ni-nin*.

Furu-toto mo
Hara-bara koto ni
KIMII-DERA
Hana no migaku no
Chikaku naruran.

Chiki koto no
Megumi mo fukaki
KOKAWA-DERA
Hotoku no chikai
Tanemoshiki kasa.

The first of these Lilliputian hymns commemorates the mountain shrine of Nachi and the beautifully re-echoing waterfall hard by, which is the loftiest in Japan, and compares them to Fudaraku-zan, a paradise to the south of this world, where dwells the Goddess of Mercy in a gold palace built on great crystal rocks. The second hymn, in honour of the shrine of Kimii, may be rendered thus, though an untranslatable play upon words is lost:—

" Hither from afar
 To the temple of Kimii
 Have I come to gaze on my native place,
 The flowery city, too,
 Must be near at hand."

On this the commentator quaintly remarks: "This poem may be thought to mean what it says, but it does not." And he goes on to explain that the "native place" or "home" of the poet really signifies the originally virtuous heart of Buddhist man, from which he has wandered into paths of sin, but that prayer at the holy shrine of Kimii will lead him back near again, not in deed, to the earthly metropolis, Kyōto, but to that heavenly city which is Paradise. The third poem is easier. It says (also neglecting a play upon words, for the Japanese are inveterate punsters even on the gravest occasion):—

" How trustworthy
 Is the promise of the Buddha
 Of the temple of Kokawa,
 Rich in the loving kindness
 Of our Father and our Mother."

The "Father," it should be explained, is Shaka Muni (Cākyā Muni, he whom Europeans generally call "Buddha"), the "Mother" is Amida, the impersonation of endless light, the Buddha here specially mentioned is Kwannon, the Goddess of Mercy.

I am not aware that any Japanese religious poetry has ever before been rendered into English. These examples may suffice to show that brief as the hymns may be, they are not easy to translate offhand; neither is it likely that European taste would much appreciate an extensive collection of them.

The chief care of pilgrims to all shrines after performing their short devotions, is to purchase charms to carry home with them, an arrangement which also serves the purpose of helping to support the priests. Such charms are chiefly of two kinds—the *o fuda*, which may be either a thin long wooden board, or a thin long strip of paper, with an inscription, and sometimes a picture, and the *mamori*, which is either a small edition of the *o fuda*, or else a tiny image. Occasionally the *o fuda* is mounted as a hanging scroll (*kakemono*) ; occasionally, too, the *mamori* takes the shape of a little screen, and is made of damask instead of paper.

The distinction between the two is merely one of popular terminology, and does not rest on any fundamental diversity of use or meaning; and the English word "charm" will cover the significance of both. Small charms are worn in little embroidered or damask bags to protect the wearer from danger of fire, inundation, pestilence, the pangs of childbirth, etc. Hence the Japanese name *mamori*, which means literally "safeguard," "protection." Charms are also stuck up over doorways, similarly to guard the whole household from evil of various sorts, more particularly from such as comes from the north-east, which is the most dreaded of the eight points of the compass. The larger charms are set up on the family altar, surrounded by other religious furniture. Some charms are put to more curious purposes. Here for instance, is a small one from the temple of Suiten-gū in Tōkyō inscribed with the Japanese variety of some Devanagari characters, which are used as an incantation. Sick people cut out these characters, and roll them into pills which they swallow down by the help of fresh-drawn water, whereupon anything that may be lying heavy on their stomachs is vomited up, or other suitable results are produced. This charm has also the power to preserve voyagers from shipwreck.

The accompanying charms from the large and popular Buddhist temple of Asakusa, in Tōkyō, may serve as typical specimens of those sold at hundreds of shrines all over the land. I bought them on the spot in December last, just before starting for Europe, so that nothing could well be more up to date.

I. Little paper charms (*mamori*) are to preserve the wearer respectively from lightning, pestilence, sickness, fire, drowning, thieves, insects (that is, insects inside the body, for popular Japanese superstition agrees with modern European science in ascribing many diseases to minute animal life), pollution, death by the sword, perils on the way, and perils in childbirth, while one is a general luck-bringer. Each contains a little Chinese text from the "*Fumon-Bon*," already mentioned, but

this is never read, for custom forbids the opening of a charm.

- II. Charms in the shape of pictures of Kwannon, the chief deity of the place, are called *o miei*, that is, freely translated, " holy pictures." The paper ones are by far the commonest form, costing, as they do much less than those that are shrine-shaped. Notice the sacred lotus-flower, the favourite emblem of Buddhism, which the goddess holds in her hand. According to a favourite Buddhist saying, the virtuous man dwelling in this wicked world may be likened to a lotus-flower growing out of the muck. A little *bakemono*, or scroll, is an *o miei* mounted so as to be convenient for hanging up in a family altar. The art may not be much to boast of, but then the little scroll—mounting and all—costs but ten cents, say three-pence halfpenny of English money. The whole collection of Asakusa charms did not come to three shillings.
 - III. A *kudo-fuda*, that is, a strip of paper for pasting up over the entrance to a house. The Chinese text on it is a prayer for prosperity.
 - IV. A little arrow-head-shaped parcel of rice that has been offered to the goddess. The Japanese call it *o semmai*, and eat it with reverence. Other holy meats and drinks partaken of by the faithful are the *o kumotsu* (cakes or vegetables), the *o chato* (tea), and the *o kōzui*, also called *o misu* (water). All these things are the remains of the daily offerings made by the priests, as part of their morning service. Some of them are used by the faithful for other purposes than eating or drinking. For instance, a person afflicted with bad eyes will bathe them with the holy tea,—and as weak tea is an excellent tonic to weak eyes, it may be supposed that many cures are thus effected.
 - V. A coloured strip, made in imitation of a temple flag and worn by pregnant women inside their sash to guard them during the pangs of childbirth.
 - VI. Cheap reprints of Chinese scriptures with Japanese transliteration (*not translation*), and in one case a commentary in Japanese.
- * * * * *

So far the Asakusa charms. A little red and gold imitation damask bag is a charm-bag, such as children wear, that is to say that charms are put into it, and it is then tied to the child's waist, to preserve the wearer from various ills, such as getting run over, falling into the water, &c. These crape under-

sashes (*dō-maki*) are used by women, one or more charms being inserted, and the crape tied round the waist under the other sash. Sometimes money is carried in the same manner.

Very common forms of charms which do not happen to be included in the little collection from the temple of Asakusa are exemplified by these two boards—one from Itojuji, a Buddhist temple in Tōkyō, the other from the sacred mountain Ōyama. The inscription on the former certifies that the ceremony of lighting the sacred *Goma* fire in honour of the god Sudō having been performed, the worshipper's household will be at peace, his business prosperous, and all ills averted from him and his. The board from Ōyama, more terse, simply styles itself a memento of prayer offered to the local deity. The printed paper which often replaced the written board is exemplified by the accompanying specimen from Kinkwa-zan, the beautiful holy island of the north. Other charms are contained within it. The tiny carved charms which are occasionally carried on the person may be illustrated by this little image of Katō Kiyomasa, a great warrior of the 16th century, celebrated as a persecutor of the Christians, and deified by the Nichiren seat of Buddhists. It was bought at a temple near Kumamoto in Southern Japan in December of last year.

As to charms of other types, and miscellaneous articles connected with minor superstitions. The plans of temples, both coloured and uncoloured, and the cheap prints, with pictures and text, illustrative of pious legends, are particularly widespread. Each little district has its sacred tree, its miraculous well, or its wonder-working image; and as printing is cheap in Japan, and almost everybody can read, both pen and pencil are constantly pressed into the service of local piety.

Owing to the interpretation of the two religions, Shintō and Buddhism, during many centuries, Shintō has come to adopt the custom of pilgrimages and charms on the Buddhist pattern. Shortly after the revolution of 1868, large numbers of temples, which had till then been served by Buddhist priests, were handed over to the Shintōists for reasons into which it is impossible to enter here. In such cases alterations were made in the names of the deities inscribed on the charms and in some other details; but otherwise the charms remained much as they had been before, as indeed did the ways of the pilgrims, who, being mostly drawn from the humblest classes of society, and belonging to a race little given to religious speculations or disputes, remained true to each favourite shrine as to a fetish, regardless of changes in the temple theology and ritual. The great Kompira pilgrimage is a good instance of this peculiar kind of conservatism subsisting amidst innovation. Kompira, situated in the

island of Shikoku, is a shrine for which sailors and travellers have a peculiar devotion.

When I first visited it some seventeen years ago, it was in Buddhist hands. On going there again last November, I found it Shintō; but the pilgrims' hostellries, the money-changers, and the charm-vendors, here driving as brisk a trade as ever, not more changed than was the exquisite view of the mountains of Sanuki and the Inland Sea, that greets the traveller from the summit of the hill, up which the temple buildings extend. Here you see paper charms of the ordinary kind. They bear the simple inscription, "A charm from the shrine of Kotohira" (another pronunciation of Kompira). One or more of these charms may be inserted in the charm-box (*fuda-bako*), of which this is a specimen. Perhaps you will think it tawdry; but remember the class of persons who buy such things.

Charm-boxes are wrapped up in oil-paper for the pilgrims to hang round their necks, and carry away with them. The large red Chinese character 金, which the Japanese pronounce *kin* or *kon*, stands phonetically for the first syllable of the word Kompira. The long board wrapped up in oil-paper is another item distinctive of the Kompira and one or two neighbouring pilgrimages. The specimen here exhibited comes from Hashikura-ji, an ancient shrine, and one fifteen miles inland from Kompira among the mountains, in a district scarcely ever visited by Europeans, where the rapids of the lovely Yoshino-gawa dash along at the foot of a high cliff, which the temple dominates like a feudal castle. The two shrines,—Kompira and Hashikura-ji,—play into each other's hands, though the former has become Shintō, while the latter has remained true to the Buddhist faith. This scroll (*kakemono*), representing the god of Kompira, attended by a host of long-nosed goblins (*tengu*), was purchased by me of the Abbot of Hashikura-ji in November last. Pious persons hang up such scrolls in the alcove of their room.

A catalogue of objects so closely resembling each other as do many of these charms from different places, must be a tax on your patience, especially in connection with numbers of unfamiliar, geographical names. I would only crave your indulgence for two more sets of holy objects—one from Ise, and one from Izumo. Ise and Izumo, be it remarked, are the Mecca and Medina of the Shintō cult—the pure Shintō cult, unmixed with Buddhism. At Ise are worshipped the Sun-Goddess Amaterasu, ancestress of the Mikados, and Toyo-uke-bime, the Goddess of Food. At Izumo the chief object of worship is Onamaji, who would seem to have been originally a deity or monarch of the native race whom the early Mikados, coming

from the south-west, subdued. Susano-o, brother to the Sun-Goddess, is also much worshipped in that part of Japan. The Izumo pictures, which were sent to me by Mr. Lafcadio Hearn, are hung on that wall. Nos. 1 and 2 portray the creation of the world and the genealogies of the gods. A devout Shintōist, well up in his "Kojiki," will understand them as well as a Christian does a set of Bible pictures. No. 3 represents the Seven Generations of Heavenly Gods and the Five Generations of Earthly Gods (*Ten-jin Shichi-Dai, Chi-jin Go-Dai*). In No. 4 we see the Sun-Goddess and various gods connected with agriculture. In Nos. 5 and 6 we have the legend of Susano-o slaying the Eight-headed Serpent of Izumo, the inscription on No. 5 being the celebrated verse commencing *Ya-kumo tatsu*, which is looked on as the fountain-head of Japanese poetry. The remaining Izumo numbers are less classical. No. 7 gives a coloured representation of the sacred snake (*Ryūjin*), which swims ashore in the tenth moon of every year, near the temple of Hino Misaki, as a messenger from Watazumi-no-Kami, the God of the Sea. Nos. 8 and 9 are from the same place, being genuine charms (*o manori*), not mere sacred pictures (*o miei*) like the preceding numbers. No. 8 represents the serpent again, while No. 9 is a charm preservative of the health of horses and cattle. Several sacred symbols of the Shintō religion, viz., the straw rope (*shime nawa*), the Cleyera tree (*sakaki*), and the *gohoi*, or paper symbols representing the ancient offerings of cloth. No. 10 has three deities, and underneath them what is called the *Kane no naru ki*, that is, the tree on which money grows—a sort of punning morality; for the word *ki* means "tree," and all sorts of virtues whose names end in the same syllable, *ki*, are represented as branches of this wealth-producing tree; for instance, *shōjiki*, "honesty;" *shimbō yoki*, "patience," &c., &c.

And now to end up by Ise, which is the holiest of all Shintō shrines—holier even than Izumo itself, and so popular that as many as 199,000 are said to have visited it on a single day. The articles from there date from March of last year, when I made a pilgrimage to the place, and saw what little is allowed to be seen by eyes profane—for none but the priests and Imperial Personages are permitted to enter the two great temples dedicated respectively to the Sun-Goddess and the Goddess of Food. The wooden charms from Ise have a special name, *o harai*, which seems to mean "clearance," "purification," "expulsion of evil spirits;" and the peculiar sanctity attaching to them arises from the fact that they are actually fragments of the temples themselves. A very ancient rule prescribes that the temples shall be razed to the ground and reconstructed

every twenty years in precisely the same style, down to the minutest detail. For this purpose two closely adjacent sites are provided for each, and the construction of the new temples is commenced on the vacant sites towards the close of the twenty year period. When they are finished, the ceremony of *Sengyo*, or "Transference of the Sacred Emblems," takes place, whereupon the old temples are pulled down and cut up into myriads of charms. The renovation last took place in October, 1889.

These simple looking charms, therefore, are actually bits of the Sun-Goddess's temple, as precious relics to devout Shintōists as would be to Christians a fragment of the True Cross, but fortunately very much more easy of attainment and more probably genuine, seeing that a fresh and abundant supply is forthcoming once in every twenty years. Not all that you see, however, is the true temple wood. The original and proper form of the *o-harai* is a box made of other wood containing a splinter of the true wood. These tiny specimens (*mame o-harai*) are of the orthodox box shape; but these larger ones are reduced to two thin boards with the splinter between them, as is easily perceptible to the touch. The change of form has arisen from a desire on the pilgrim's part to economise space, a large box slung round the neck being no handy bit of luggage. The splinter in paper is, of course, a further simplification of the original idea, so that we have here a line of development in three stages. These pieces of the true wood form, with remnants of the sacred offerings (this little packet contains rice offered on the altar of the Goddess of Food), are the Ise charms properly so called. Here, however, is a little silver medal inscribed with the name of the Sun-Goddess and doubtless capable of working great good to the wearer; though this particular form of charm is new, to the best of my knowledge, and traceable to European influence. Lastly, there are some pictures and books sacred and semi-sacred. All the sacred pictures are modern in treatment, dating only from 1889 or 1890. No. 1 is the Sun-Goddess, mirror in hand, and with a necklace of the curious ornaments called *moga-tama*, that is, curved jewels, round her neck. No. 2 represents the same divine personage attended by the Goddess of Food and by the first human Mikado, Jūnū Tenno, whose presence in such a group would of itself date the drawing down to quite modern times, for it is only during the present reign that an attempt has been made by the authorities, both political and religious, to spread the respect—one might almost say worship—of the Imperial House. No. 3—the *Kakemono*—has seven of the chief Shintō deities, viz., the Sun-Goddess, the Creator and

Creatrix, Izanagi and Izanami, the Goddess of Food, Hachiman the God of War, the God Kasuga, and the God Saruta-biko.

No. 4 represents the antique treasures belonging to the Ise temples. No. 5 is the sacred dance called *Dai-dai Kagura*, and this picture is truer than the others to early types. No. 6 is a plan of both temples, together with other neighbouring scenes. No. 7 is an Almanac for the year 1891, for long ages issued by the priests. No. 8 is a local guide-book—illustrated as such books always are in Japan.

There are a few more miscellaneous charms on this table; also one of the fire-drills of chamecyparis wood from the great Shintō temple of Izumo, which the enlightened high priest, Mr. Senke, consented to part with, in order that the learned world of Europe might be able to inspect an example of this most ancient of Japanese religious implements.

But time presses, and patience has its limits. An attempt has been made this evening to skim along a portion of the outside of a vast and complicated subject. To others must be left the task of completing the survey, and the far more difficult matter of solving questions relating to the history, development, and significance of these minor Japanese religious practices. Something has, indeed, already been accomplished in this field of research, notably by Mr. E. M. Satow's elaborate papers on Shintō, published in the "Transactions of the Asiatic Society of Japan." But the more popular Japanese superstitious and religious practices—especially the Buddhist ones—have scarcely yet been explored, and can only properly be studied in connection with the Chinese and Korean popular Buddhism from which they spring.

DISCUSSIONS.

Mr. A. L. LEWIS said, with regard to the placing of the temples to the north-east of the towns, that any such reference to the north-east in temples was generally thought to be connected with sun worship, but Prof. Chamberlain had connected this Japanese custom with fear of demons who inhabited the north-east. Was there any association of these demons with the sun, or sun worship, or could Prof. Chamberlain give any more information about them?

Mr. N. DÜSER, Hon. Secretary of the Japan Society, suggested that the situation of the great temples to the *north-east* of Tokyo, that being the point of the compass from which the greatest danger was anticipated, might be traced to the early struggles between the Ainu and their Japanese conquerors (the ancestors of the present Emperor), who came from the *south-west*.

As they drove the natives before them, the north-east would naturally become the point of danger, from which nocturnal attacks of the enemy might be expected.

Mr. DÍÓSY, alluding to Prof. Chamberlain's statement that the Japanese ascribed most diseases to the action of parasitical insects inhabiting the human body, pointed out that Dr. Baelz, the great authority on the physical characteristics of the Japanese, had stated (as recorded in the "Mitteilungen" of the German Asiatic Society of Tokyo) that the bodies of the Japanese contained more worms and other internal parasites than those of Europeans, but Dr. Baelz added that they did not seem to do the Japanese much harm.

Mr. BEAUFORT remarked that when he was in Japan in 1869, he chanced to arrive at Nagasaki on the day of the festival of the spirits of the dead. The town is situated at the head of an inlet of the sea inclosed in a basin rising abruptly from the edge of the water. On the low hill sides were many tombs which at night on this occasion were illuminated with coloured paper lanterns, and produced an exceedingly picturesque appearance. On all the tombs were supplies of food for the entertainment of the spirits. Next morning the spirits were sent away in small vessels prepared for the purpose and supplied with food for the voyage. One of these small vessels was found next day a long way out at sea, still sailing along when Mr. Beaufort's steamer left Nagasaki.

Explanation of Plates XXIV, XXV.

PLATE XXIV.

- A.—Pilgrim to the Thirty-three Holy Places sacred to Kwannon (Goddess of Mercy).
 B.—Pilgrim to the Eighty-eight Holy Places of the Island of Shikoku.

PLATE XXV.

- Fig. 1.—Board charm "ita fuda" from Hokuji, Tokyo.
 Fig. 2.—Charm box from temple of Kompis, showing manner of wrapping up for carrying on breast by pilgrim.
 Fig. 3.—Tubes used by peasants of Izumo for carrying offerings of sea-water to the shrine of Yaegaki.
 Fig. 4.—"Nobori," or prayer banner, planted round foundations of temple to signify that a prayer has been granted.
 Fig. 5.—Charm from Isé, fragment of wood from temple of Sun Goddess (Amaterasu).



A

B

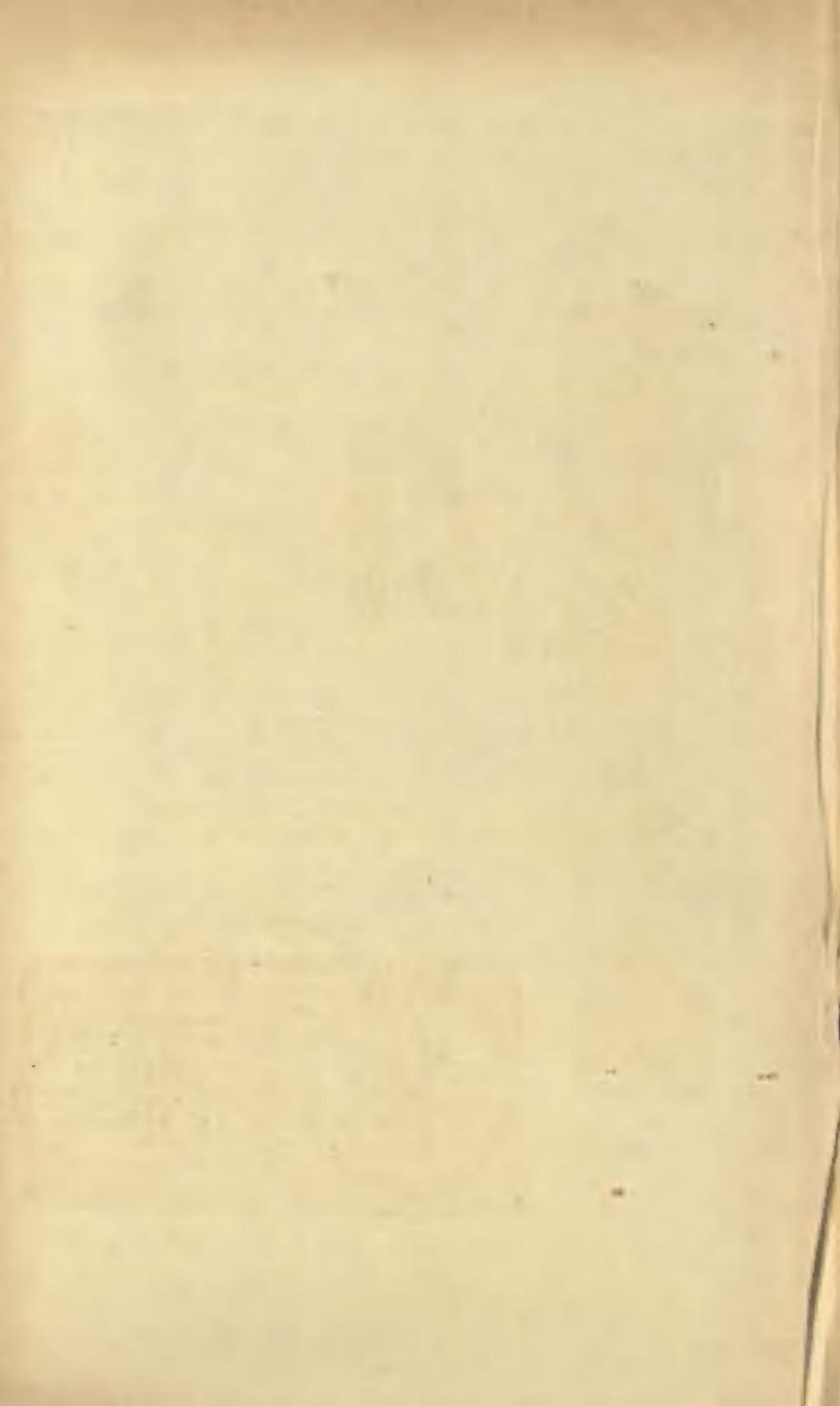




FIG. 1.



FIG. 3.



FIG. 4.



FIG. 5.



FIG. 2.



ANNUAL GENERAL MEETING.

JANUARY 24TH, 1893.

EDWARD B. TYLOR, Esq., D.C.L., F.R.S., *President, in the Chair.*

The Minutes of the last Meeting were read and signed.

The CHAIRMAN declared the ballot open, and appointed Mr. E. LAWRENCE and Mr. S. H. RAY Scrutineers.

The Treasurer, Mr. A. L. LEWIS, read the following Report:—

TREASURER'S REPORT FOR 1892.

The income of the Institute for the year 1892 from subscriptions, publications, and interest was £604 18s. 9d., being £48 10s. 2d. more than was received from the same sources in 1891. Of this increase £31 12s. 2d. arose from subscriptions, and £17 13s. 5d. from the sale of publications; interest being diminished by 15s. 5d. in consequence of the sale of £89 8s. 9d. stock, which produced £100. £12 2s. 6d. were also received for books, &c., sold from the library, because the room they occupied was, from our point of view, more valuable than the information they contained.

The sale of stock referred to was rendered necessary by the fact that the expenditure for the year was £692 0s. 8d., being £87 1s. 11d. more than the income for the year, and £82 19s. 11d. more than the corresponding expenditure for 1891. Of this excess in expenditure, £80 8s. 8d. has been spent on the *Journal*, so that it may be hoped that the Fellows of the Institute, and the Sciencee, the study of which it is the object of the Institute to promote, have received the full benefit of it, and although it is not pleasing to the Council nor to the Treasurer to see the resources at their command gradually diminishing, they are impressed with the belief that the true aim of the Institute is not to hoard money which may come into its possession, but to spend it while there is yet time in acquiring and diffusing knowledge concerning those races which, with their beliefs, practices, languages, and more material remains, are in so many cases passing rapidly away. If, however, the Fellows of the Institute will devote themselves to increasing its income by inducing those who are interested in its objects, but

do not contribute to its funds, to assist it by joining its ranks, or by donations, or legacies, the Council will no longer have to choose between outrunning its income or abandoning some part of its work, and the Fellows themselves will receive the full advantage of an increased income in the shape of larger and more fully illustrated publications.

It is with great satisfaction that I find myself able to announce that the Council of the Zoological Society has consented to reduce the rent by £30 per annum, a concession for which our best thanks are due to it.

The liabilities at the end of 1891 (other than our moral liability to life members) were:—

	£	s.	d.
Rent for one quarter..	..	41	5 0
<i>Journal</i> and "Index," say ..	..	100	0 0
"Anthropological Notes and Queries"	20	14	6
Small sundries, say ..	..	8	0 6
 Total	 ..	 £170	 0 0

The assets at the same date were: £710 11s. 3d. Metropolitan Board of Works Stock (worth about £300), cash in hand and at the Bankers £69 14s. 9d., and some unpaid subscriptions, and the library, furniture, and stock of publications, as to the value of which I can offer no opinion.

A. L. LEWIS,

Treasurer.

ANTHROPOLOGICAL INSTITUTE OF GREAT BRITAIN AND IRELAND.

Receipts and Payments for the Year ending 31st December, 1892.

RECEIPTS.	PAYMENTS.
BALANCES, 1st January, 1892:	
Cash at Bank	£ 4 0
Cash in hand	4 7 3
Petty Cash in hand	4 16 0
Cash in Banking account	0 0 0
	<hr/>
Less a Notes and Queries' account	42 8 6
	<hr/>
SUBSCRIPTIONS:	99 3 3
For Year 1892	889 11 0
Life Compositions	42 0 0
Arrivers	39 18 0
In advance	1 3 2
	<hr/>
SALE OF PUBLICATIONS:	472 12 2
Messrs. Topham & Co.	84 11 7
Office Sales	21 4 5
	<hr/>
Books, &c., SOLD FROM LIBRARY	12 2 6
Dividends:	105 10 0
One year on Metropolitan Board of Works 3d per cent. Stock, less Income Tax ...	20 10 7
Sale of £60 8s. M. of the above stock	100 0 0
" ANTHROPOLOGICAL Notices and Quotations"	42 8 6
Balances as per last account	
Received towards cost of printing from British Association	20 0 0
Sales	8 6 0
	<hr/>
Less paid further on account of printing	50 0 0
	<hr/>
	20 14 6
	<hr/>
	£766 19 0
	<hr/>
	£ 4. d.
BANK (including coal and gas), one Year to March, 1892	165 0 0
POSTAGE JOURNAL, Nos. 76, 77, 78, and 79 (in cluding illustrations and Authors' copies) 247 8 8	
Less remitted from Prof. Prestwich for Illus- trations to his paper	8 8 0
	<hr/>
BALANCES AND COLLECTOR'S COMMISSION STAMPS AND PARCELS	244 0 8
ADVERTISING	165 11 4
PUBLISHING AND STATIONERY	40 18 7
PAPER EXPENSES, Cleaning Frooms, &c.,	2 7 6
Attendance and Refreshments at Meetings	29 15 11
	<hr/>
INSURANCE AND MISCELLANEOUS EXPENSES	16 16 0
BANK ACCOUNT:	22 15 0
Balances to hand, 1st January	79 11 0
" " 21st December	4 15 8
	<hr/>
BALANCES, 31st December, 1892:	£ 0 0 0
Cash at Bank	12 17 6
Cash in hand	2 6 0
Petty Cash in hand	1 1 11
Cash in hand on Banking account	60 14 0
	<hr/>
A. L. Lewis, Treasurer.	
Examined and found correct,	
(Signed) EDWARD W. BLANDFORD, } <i>Account</i> ,	
ROBERT E. BOLT,	

The Secretary, Mr. CUTHBERT E. PEAK, read the following Report:—

REPORT OF THE COUNCIL OF THE ANTHROPOLOGICAL INSTITUTE
OF GREAT BRITAIN AND IRELAND FOR THE YEAR 1892.

During the past year eleven Ordinary Meetings and one Special Meeting have been held, in addition to the Annual General Meeting.

The following is a list of the various communications that have been submitted to the Institute during the year:—

1. Customs among the Natives of East Africa, from Taita to Kilimegalia, with special reference to their Women and Children. By Mrs. French-Sheldon.
2. Exhibition of articles and implements of every day use among the Chin Tribes on the Burmese and Chinese Frontier. By M. J. Walhouse.
3. Exhibition of the Skull of a Chin Dacoit Leader. By Captain E. S. Hastings.
4. On the Exploration of Howe Hill Barrow. By J. R. Mortimer.
5. On the Human Remains found in Howe Hill Barrow. By J. G. Garson, M.D.
6. The Natives of Borneo. Edited from the Papers of the late H. B. Brooke Low. By H. Ling Roth.
7. The Continuity of the Palaeolithic and Neolithic Periods. By Joe. Allen Brown, F.G.S.
8. East Central African Customs. By Rev. James Macdonald.
9. The Archaeology of the Zimbabwe Ruins. By J. Theodore Best, F.S.A.
10. The Social and Religious Ideas of the Chinese, as illustrated in the Ideographic Characters of the Language. By Prof. R. K. Douglas.
11. The Mythology and Psychology of the Ancient Egyptians. By Joseph Offord.
12. Exhibition of Aino dresses, weapons, &c., from Mr. Chamberlain's Collection. By Dr. E. B. Tylor.
13. The Ainos of Japan. By Mrs. Isabella Bishop.
14. An Ethnological Enquiry into the Basis of our Musical System. By Dr. R. Wallachek.
15. Some Minor Japanese Religious Practices. By Prof. Basil H. Chamberlain.
16. Developments in Buddhistic Architecture and Symbolism, as illustrated by recent exploration of Caves in Burma. By Major R. C. Temple.
17. Anthropological Uses of the Camera. By E. F. im Thurn, C.M.G.
18. On Courage. By H. Ling Roth.
19. The "Morong." By S. E. Pval.
20. On a Prehistoric Interment in the Cave of Barna Grande, near Mentone. By Arthur J. Evans, M.A., F.S.A.
21. Polynesian Mythography—a Symbolism of Origin and Descent. By H. Colley March, M.D.

In the course of the year the following numbers of the *Journal* have been issued: Nos. 78, 79, 80, and 81, Nos. 80 and 81 having been published together as a double number. These contain 450 pages of letterpress, and are illustrated by 16 plates.

Thirty-five new members have been elected during the year.

viz., eleven honorary, and twenty-four ordinary Fellows; fifteen have retired or been struck off by the Council, while no less than seventeen Fellows have been removed by death.

In the following table the present state of the Institute, with respect to the number of members, is compared with its condition at the corresponding period of last year:—

	Honorary.	Corresponding.	Compounders.	Ordinary.	Total.
January 1st, 1892	39	75	89	229	432
Since elected ..	11	..	2	22	35
Since deceased ..	4	..	7	5	16
Since retired or struck off ..	..	..	..	15	15
January 1st, 1893	46	75	84	231	436

The following are the names of the Fellows whose deaths have been reported during the year:—

- Sir Richard Owen.
- Mons. de Quatrefages (de Breau).
- Mons. Ernest Renan.
- Sir Daniel Wilson.—Honorary Fellows.
and, T. Squire Barrett.
- Surgeon-General H. W. Bellew.
- Sir William Bowman.
- Sir George Campbell.
- Richard Cull.
- Captain T. Fraser.
- W. Jennings.
- John Edward Price.
- J. Ramsay.
- Lord Arthur Russell.
- Dr. W. Mackenzie Skues.
- J. Wodderspoon.

The Reports were adopted on the motion of Mr. H. O. FORBES, seconded by Mr. J. EDGE PARTINGTON.

The PRESIDENT delivered the following Address:—

ANNIVERSARY ADDRESS.

By EDWARD B. TYLOR, D.C.L., F.R.S., *President.*

IT is a satisfaction to me in concluding my term of office as President of the Anthropological Institute, to feel that though our financial straits are by no means past, we are doing work of an amount and quality justifying some self-gratulation. I have been particularly struck by the frequent expressions of appreciation by foreign anthropologists as to the amount of new knowledge which our *Journal* is more than ever producing. It is indeed feared by some that one of our main topics may before long dwindle and disappear. When the savages and barbarians are disposed of by civilization or extirpation, their anthropological material is more or less exhausted. At present, however, this is so far from having happened that its supply is on the whole better and more plentiful than ever. With many tribes indeed the record is closed, as with the Tasmanians, representatives of the palaeolithic age in modern times, who can give us few more details of the lowest known stage of culture beyond those collected by Mr. Ling Roth. But not to give a whole list of modern works, it is enough to say that for minutely accurate accounts of uncultured life, none excel Codrington's "Melanesians" and Kubary's writings on the Pelew Islanders, and we can only regret that the anthropologists of past centuries were not alive to the need of such minutely careful study of the tribes who were then, but are not now, in a state to be thus studied. One class of anthropological material of which the quantity available has only lately been appreciated, is folk-lore. When, fourteen years ago, I took part in founding the Folk-lore Society, for the preservation and publication of popular traditions, legendary ballads, local proverbial sayings,

superstitions, and old customs, and all subjects relating to them, I as little as others anticipated how many volumes of such matter it would produce, nor of how great a value they would be, not only as to the main purpose of tracing the development and diffusion of popular tradition and fancy, but as to the incidental knowledge of man which is preserved in them. Especially to students of the development of ethical ideas, folklore stories are exceptionally valuable, recording as they do in their incidents what were the ideas on good and bad actions, not indeed of the age in which the stories are gathered, but of a remoter past kept thus in memory.

Much interest has naturally been taken by this Institute in the proceedings of the committee of anthropologists appointed by the British Association at Montreal in 1884, and continued since, for the investigation of the north-western tribes of the Dominion of Canada, with funds supplied by the Association and liberally reinforced by the Canadian Government. The control of these investigations has naturally been mainly in the hands of the Canadian members, especially of two of our Honorary Fellows, the late Sir Daniel Wilson and Mr. Horatio Hale, the veteran explorer. The eight reports issued in the annual British Association volumes form a body of information collected by Mr. Hale, Dr. G. M. Dawson, Dr. Franz Boas, Mr. J. F. Chamberlain, the Rev. E. F. Wilson, elucidating and correlating the physical, linguistic, and social structure of a group of tribes far less known than the North Americans further east, and for that very reason less changed by contact with civilization than such familiar types as the Ojibwas or the Hurons. We now understand better than before the difficult anthropological problem of the Blackfeet Indians, classed as Algonquins by the structure of their language, but so mixed with other race-elements that this relation, obscured by the mass of adoptive words in their vocabulary, has only lately been recognized. Proof that the grammar of a language is a more enduring characteristic than the dictionary may be well found here.

On passing farther west among the mass of tribes toward the

Pacific coast, who are reckoned to have among them some forty different families of languages, attention is arrested by the linguistic problem thus presented, which Mr. Hale feels obliged to meet by the hypothesis of several distinct origins with special effect in new development from children's language. I venture to think, however, that the problem may be much reduced by the principle well illustrated by Mr. Hale himself among the Blackfeet. Though the vocabularies of these languages as drawn up in the reports differ extremely, the grammatical characteristics seem to show traces of common structure. There hardly appear in any one of these dissonant tongues types of grammar which cannot be matched elsewhere in the district. One remarkable character appears in the amazing consonantal phonetics all but impossible to European races, but of which an explanation is suggested by comparison of the Heiltsuk with the Kwakiutl (VI Report, p. 104). Why should the former people have a tendency to use the almost unspeakable sound *k̥ks* for eye? On looking for an equivalent word among the latter people, we find *k̥ayaks*, as if this were the original, which elision of vowels has reduced to a phonetic skeleton. Another point relates to the relationship-names, which with all their wonderful complexity—astonishing to the European, with his simple kinship-terms—conform to the systems of other barbaric regions, as if to show common types of ideas pervading the mental developments of races which language-structure hardly avails to connect. So great is the mental similarity of such conceptions among various tribes, that it is surprising to find in any one an unusual notion of relationship, such as the following belonging to Salish. One's uncles and aunts are *sisi*, one's nephews and nieces *stacatl*, but this is only while one's father or mother, through whom the relationship comes, are alive; when these die the uncles and aunts become *notsaeqoitl*, the nephews and nieces *swinmaitl*. It is easy to imagine family relations when it might be convenient to make a term for "lately-nephews" in distinction from "actually-nephews," but we have more to learn of the social systems of

the barbaric world before we can explain how these rude coast fishers came to want and invent it.

It is a ground of satisfaction, in looking through these reports, to feel that a systematic account of the anthropology of British North-west America is to a great extent completed. Not that everything requiring record has been recorded. Observation of rapidly-changing native life will still tax to the extreme the efforts of the anthropologists of the Canadian Dominion, but it is a great work to have the framework already set up to be filled in further in future years.

It is too wide a subject to attempt even mention of the anthropological books of the year, but I have to point out how much we are indebted to the able editor of the *Journal* for the first systematic and successful attempt to bring its readers into contact with the current anthropological literature by short notices in the *Miscellanea*. The gain of such means of calling attention to new information on the points each student reads with interest is very great, and it is to be hoped that the plan will succeed and expand.

There is, however, one new anthropological book to which I must call special attention, not so much for its subject as its plan. Last year it was my duty to announce the untimely death of the eminent anthropologist Prof. G. A. Wilken, of Leyden. As professor of the Ethnology of the Dutch East Indies, it was his duty to teach his students in a compendious form the habits and ideas of the native races among whom they would go out to administrative duty. Wilken's intention was to bring his vast information on Malays and Papuans into the form of a manual, and at his death his friends thought an edition of his lecture notes for this purpose would be a fitting memorial, which work has been carried out by his scholar and friend Dr. C. M. Pleyte, of Amsterdam.¹ It is not a large book, but a simple compendium of knowledge of the races of Netherlands India, their food, clothing, houses, weapons and warfare,

¹ G. A. Wilken: "Handleiding voor de vergelijkende volkenkunde van Nederlandsch-Indië," uitgegeven door Dr. C. M. Pleyte. Leiden: Brill, 1892.

language, writing, reckoning, amusements, music and dancing, social life, marriage laws, funeral customs, civil and criminal law, land tenure, government, &c. It is most important to anthropology to have systematic study encouraged of the special institutions of this part of the world, where society is so old-fashioned that the rudest maternal form of marriage, in which the husband does not even live in the house with his wife, is even now at any rate fresh in the recollection of old people who lived under it in their youth. I do not say that the officers of our own civil service in the East have no systematic information as to the natives of the regions governed by them, but I doubt if any such practical handbook is available in the British East Indies, and think that this work may furnish useful hints toward such means of information being regularly provided as an official help to our Oriental administrators.

It is with pleasure that I call the attention of the meeting to the supply of an important want. The use of our publications by anthropologists has been more and more hampered by the difficulty of discovering where and when a particular subject has been treated in the volumes of our publications. Now, with only a slight reduction of the ordinary papers of the *Journal*, our members will have the benefit of an index of the papers of the whole series of societies from the original *Journal* of the Ethnological Society of over forty years ago, to the twentieth volume of the Anthropological Institute.

The International Congress of Orientalists of 1892, held in London under the Presidency of Prof. Max Müller, not only had its Anthropological Section, but in its other sections provided valuable material for anthropology. India was well represented, and Mr. W. Crooke's paper on "Scientific Ethnography in Northern India," taken in connexion with Mr. H. H. Risley's paper on "Anthropology in India," and with the support of Mr. Vincent Smith, Mr. T. W. Arnold, Mr. Baines, and Mr. Browning, led to the following important sectional resolution, which was afterwards adopted by the Congress as a

whole, and will probably have its effect in promoting ethnographic research and record in India :—

"That the Anthropological Section of the Oriental Congress desire to express their sense of the political as well as scientific importance of the anthropometric and descriptive information collected under the orders of the Government of Bengal, and note their satisfaction that the Government of the North-West Provinces and Oudh has taken steps to promote ethnographic studies within its jurisdiction, and trust that this line of research may receive throughout India the countenance and support of other Local Governments and Administrations. Sufficient interest exists among Indian officials to enable the investigation in question to be carried on without the necessity of applying to Government for a subsidy."

It is unnecessary to give details of the papers read, inasmuch as the principal will appear in full in the Congress Report, including that of Prof. Leumann on the "Rosaries of the Jainas," of Mons. M. Tchéraz on "Armenian Mythology," Count de Gubernatis on "Popular Myth," Mr. E. H. Man on "Marital Relations of the Nicobar Islanders." Prof. Kovalevsky read a paper on "Iranian Influence in the Caucasus," which can be traced not only in the survival of names like that of Ormazd, but in certain superstitions connected with the burial of the dead, the character of impurity attached to the cat, and the magical virtue assigned to the clippings of the nails and hair of human beings. This paper is to form part of a forthcoming work.

We have lost by death in the past year four Honorary Members, men of high distinction in science and literature. Sir Richard Owen always included anthropology in his biological work, and his connexion with the parent societies of the Anthropological Institute goes back over thirty years. In 1863 we have in the "Trans. Eth. Soc." a paper by him on the Andaman Islanders, whom he regards as having lasted on from an earlier geological period, and not closely connected with any other existing race. "The

cardinal defect of speculators on the origin of the human species seems to me to be the assumption that the present geographical condition of the earth's surface preceded, or co-existed with, the origin of such species." This was then a novel view, and he returns to it in his address to the Oriental Congress in London in 1874, applying the same reasoning to the ancient Egyptians, contesting on the one hand the old popular educational view that they were degraded blacks, "descendants of Ham," and on the other hand the new theory of Huxley connecting them with the natives of Australia. I remember this address and the impression made by Owen's argument that the unbroken monumental history of Egypt left no room for the Deluge to have overflowed the valley of the Nile 5,000 years ago. Public opinion as to ancient history has moved much during the last twenty years.

J. L. Quatrefages de Bres was also a biologist in the largest sense, but with special devotion to anthropology, of which science he became in 1855 Professor at the Musée d'Histoire Naturelle in Paris. To anthropologists he is known by his works, "*L'Espèce Humaine*," and "*Introduction à l'Étude des Races Humaines*," in which the important studies on the anatomical characters of the races of man will retain their value, though the attempt to fix and define a primitive human type was premature.

As a writer on religion Ernest Renan moved the world's thought. As a philologist and historian he was among the leaders of our time in working out the culture and religion of the Semitic races. Incidentally he wrote a brilliant essay on the "*Origin of Language*." Though he was hardly in the technical sense an anthropologist, so eminent a name adorned our list of Honorary Members.

Sir Daniel Wilson, engaged during a long and active career in many pursuits, was led on forty years ago from archaeology into anthropology, to which he gave henceforth much of the time that could be saved from educational and administrative work. His "*Archaeology and Prehistoric Annals of Scotland*" introduced

the word "prehistoric," which now means so much in our science. It was followed by his "Prehistoric Man: Researches into the Origin of Civilization in the Old and the New World," in which, as its title imports, his later experiences of American lake and prairie are made to interpret the archaeological relics of Scotland. Since the Montreal meeting of the British Association in 1884, Sir Daniel Wilson practically superintended the work of the Committee of Investigation of the N.W. Tribes of Canada, of which I have already given some account. A paper on "American Illustrations of the Evolution of New Varieties of Man," 1878, appears in our *Journal*, vol. viii.

Among members deceased last year the name of Sir George Campbell, K.C.S.I., formerly Lieutenant Governor of Bengal, is to be mentioned for his services to anthropology. The observations made during his administrative career were embodied in systematic descriptions of the races of India; one of these papers is published in the "Journal of the Ethnological Society," N.S., vol. i, a shorter article in "Journ. Anthropol. Inst." vol. xvii, p. 289. A more detailed paper on the "Ethnology of India" appeared in the "Journal of the Asiatic Society of Bengal."

Mr. Richard Cull was, from 1849-53, Honorary Secretary of the Ethnological Society and a frequent contributor to its Proceedings; Lord Arthur Russell was from 1875-88 a member of our Council; Sir William Bowman, F.R.S., and Surgeon-General Bellew, C.S.I., were Members of the Anthropological Institute; John Ramsay, Esq., of the Ethnological Society; W. Jennings, Esq., J. Wodderspoon, Esq., T. Squire Barrett, Esq., and Dr. W. Mackenzie Skues, of the Anthropological Society.

To turn in conclusion to the future prospects of the Institute, it is with satisfaction that I venture to announce by anticipation my successor in this Chair, the eminent anatomist Professor Alexander Macalister of Cambridge. Nothing is more in the interest of this Institute than that the several branches of

anthropology, so far dissimilar in their materials and methods as to be seldom attained to entire possession of by any individual anthropologist, should be represented in this Chair in some sort of succession. Our experience has led us to continue with satisfaction the prosecution within the same society of the physical, philological, archaeological, cultural, and traditional lines of the study of Man. We are not dissuaded by the views of respected fellow-students elsewhere in the world, who hold that anthropology should only concern itself with the physical structure of the human species. We willingly sacrifice such strict uniformity of study and purpose, in exchange for the gain arising from the mutual assistance of the studies of man's various attributes, where each supplements the others and often at their weakest points. The successful carrying out of this plan, however, necessitates a kind of anthropological rotation of crops, and it is obviously advantageous in the present case that a physical should succeed a cultural President. We may hope that under the leadership of Professor Macalister some of the crucial problems as to the nature and development of race-differences in complexion, hair, even in skull and brain, as to which general anthropologists are ever asking knowledge from physical anthropologists, may come a step nearer their ultimate solution.

It was moved by Sir WILLIAM FLOWER, seconded by Dr. GARSON, and unanimously resolved—

"That the thanks of the Meeting be given to the President for his Address, and that it be printed in the *Journal of the Institute*."

The SCRUTINEERS gave in their Report, and the following gentlemen were declared to be duly elected to serve as Officers and Council for the year 1893.

President.—Prof. A. Macalister, M.D., F.R.S.

Vice-Presidents.—J. G. Garson, Esq., M.D.; Charles H. Read Esq., F.S.A.; F. W. Rudler, Esq., F.G.S.

Secretary.—Cuthbert Peek, Esq., M.A., F.S.A.

Treasurer.—A. L. Lewis, Esq., F.C.A.

Council.—G. M. Atkinson, Esq.; H. Balfour, Esq., M.A.; E. W. Brabrook, Esq. F.S.A.; Hyde Clarke, Esq.; J. F. Collingwood, Esq. F.G.S.; Prof. D. J. Cunningham, M.D.; W. L. Distant, Esq.; J. Edge-Partington, Esq.; A. J. Evans, Esq. M.A. F.S.A.; H. Gosselin, Esq. M.A.; Prof. A. C. Haddon, M.A.; T. V. Holmes, Esq. F.G.S.; R. Biddulph Martin, Esq. M.A.; R. Munro, Esq. M.A., M.D.; F. G. H. Price, Esq. F.S.A.; Oldfield Thomas, Esq. F.Z.S.; Arthur Thomson, Esq., M.D.; Coutts Trotter, Esq. F.G.S.; M. J. Walhouse, Esq.; Gen. Sir C. P. Beauchamp Walker, K.C.B.

A vote of thanks to the retiring Vice-President, the retiring Councillors, the Secretary, the Treasurer, the Auditors, and the Scrutineers, was moved by Sir HUGH LOW, seconded by Mr. J. ALLEN BROWNS, and carried by acclamation.

ANTHROPOLOGICAL MISCELLANEA AND NEW BOOKS.

Sketch of Aulua Grammar, with Vocabularies of Aulua and Lamangkau, Malekula, New Hebrides.

By SIDNEY H. RAY.

MALEKULA (or Mallicollo) is one of the largest islands of the New Hebrides. It is situated North West of Epi, and West of Ambrym, between 15° 45' and 16° 35' S. lat., and between 167° 7' and 167° 45' E. long. It was probably first heard of by Quiros at Tannaico in 1606 under the name of Manicolo, and must have been seen by Bougainville on 23rd May, 1768, when passing through the Straits on the north side of the island, which still bear his name. Malekula was the scene of Cook's first landing in the New Hebrides in July, 1774. Little intercourse, however, took place with white men till Bishop Selwyn first visited the island in 1851. A short list of words collected by Cook,¹ and a few others obtained by Rev. C. Abraham² from boys taken by the Bishop to New Zealand, represented the whole of our knowledge of the language until 1891.

Cook described the natives of Malekula as the ugliest and most ill-proportioned people he had met with in the Pacific,³ but it must be remembered that he had only just left Namuka, in the Tonga Group, inhabited by a Polynesian race, and had not yet visited the Southern islands of the New Hebrides. His estimate is not confirmed by later visitors, but an ethnographical account of the Malekulans has yet to be written.

Commodore Goodenough described the people at Sandwich Harbour as very like those of Ambrym, with the same weapons, dress, and ornaments, but with better houses.⁴ The natives at South West Bay were somewhat different.⁵

Cook's vocabulary was probably obtained at Sandwich Harbour, and the Rev. C. Abraham's list closely agrees with it. Commodore Goodenough obtained words from both sides of the island, from South West Bay and Sandwich Harbour.⁶ The present sketch relates to the language spoken around the Presbyterian mission station at Aulua, about ten miles north of Sandwich Harbour. The language here differs from that of Pangkuma, further north,

¹ "Voyage towards the South Pole." ³ Latham, "Opuscula," p. 245.
² "Voyage," vol. ii, p. 32. ⁴ "Journal of Commodore Goodenough," p. 327.
² "Journal," p. 331. ⁶ "Journal," p. 36, &c.

and is more like that of the island of Ambrym opposite. The Pangkumu language is, however, widely understood on the north-east coast of Malekula, and Bible translations will be in that language. A grammar and vocabulary by Rev. A. Morton is contained in Rev. D. Macdonald's *South Sea languages*.¹

For the whole of the material from which this sketch is compiled I am indebted to the kindness of the Rev. T. Watt Leggatt of Aulua.

I. ALPHABET.

1. Vowels: *a, e, i, o, u.*
2. Consonants: *k, c, g, gc, gh, h; t, d, j; p, b, f, v, w; r, l; m, mw, n; s.*

The vowels have the Italian sound. *c* = hard *g* as in *go*; *g* = *ng* in *sing*; *gc* = *ng* in *finger*; *gh* = *sh* in *sinker*, *h* = the Melanesian *g*, a guttural trill; *j* = *tch* in *fetch*; *mw* = a nasal *m*; other consonants as in English. The Melanesian *q* is written *bis* in *tencobise*.

t, d, b, p, and r are often strengthened by a nasal, and written *nt, nd, mb, mp, nr*. This seems to occur at the choice of the speaker, *mhen* or *pen*, and especially in reduplication, *bala-mba* *borimbor*.

Sound changes: Aulua *s* is in Pangkumu *j*; *ses* for *riji*, banana; *mis* for *mej*, die; *mbis* for *ej*, four. Both these sounds represent a more common *t*; *setal*, mate, *rati*. The Lamangkan agrees with the Aulua.

Aulua and Lamangkan *l* is Pangkumu *r*; *lis*, *risi*, see; *namal*, *namar*, chief, *lag*, *lig*, *rag*, fly. Aulua *v* is Pangkumu *f*, *vana*, *fanu*, fruit, *vera*, *vera*, hand; and *g* is often represented by *h*, *gani*, *hani*, eat; *guusa*, *house*, nose.

II. ARTICLE.

The demonstrative is *na* or *ne*; *na kula*, coconut; *neves*, banana.

Before a vowel *na* or *ne* becomes *n*; *nika*, fish; *nusa*, rain; except before *e*, when it becomes *ni*; *ni-cr*, smoke; *ni-el*, sun. When the vowel of the noun is *i*, *ni* is often found as article; *ni-min*, bird; *nisis*, breast.

In the vocabulary, nouns are written with the article prefixed.

III. NOUNS.

There are two classes of nouns, as usual in the Melanesian languages. The first of these name parts of the body and relationships and require a suffixed pronoun, as *vera-gk*, my hand; *teme-n*, his father. The second class are used with separate possessive prepositions or nouns, as *nimua ten balambal*, pig's house. Nouns of the first class usually have in the vocabulary the suffix (3rd sing.) *-n*.

1. *Verbal substantives* show no suffix. The same word is used both

¹ "South Sea languages": Rev. D. Macdonald, Melbourne, 1891, pp. 34-72.

as noun and verb, the noun taking the article. *Nelap elop*, the floods come; *nelag elag*, the wind blows.

2. The person performing an action is shown by *ts* or *ti* prefixed; *ti tiken*, the striker, *entesa*, to strike. This, though similar to the Efate *teo*, is probably the verbal particle.

3. The instrumental prefix is not clearly shown. *Na k-pose* is a chisel, from *pose* to chip; *na haklo*, scissors, cutter, from *uguse* to cut. In these *ka* and *ha* may be the Banks Island *ga*.¹ The Aulus *h* and the Banks Island *g* represent the same sound.

4. Many nouns denoting parts of a whole have in the vocabulary a suffix *kte*. This is unexplained. It may represent an independent form of the noun. See flower, fruit, leaf, skin, etc.

5. Plural. Usually no mark of the plural is used, but *bengk*, many, may be used. Totality is indicated by *kaskus*, all, the whole, the Banks Island *kes*, *ges*. Reduplication of nouns indicates size, *lesles*, swollen testicles, Efate *lao*, testicles.²

6. Sex if necessary may be indicated by the words *teta*, male, *tambaluk*, female, following the noun, but there is no gender. A boar is *mbui*; a sow *balambal*. (The Mota *qoe* and *mala*.)

7. The common nouns *tomen*, *gansen* when used in the vocative become *Teta!* Father! *Nina!* Mother!

IV. PRONOUNS.

1. Personal.

The full forms which are usually the subject are:

Singular 1. *ass*; 2. *egco*; 3. *hena*.

Dual 1 (inclusive of person addressed) *anturua*, (exclusive) *amurua*; 2. *amurua*; 3. *arua*, *ororua*.

Plural 1. (inclusive) *antil* (exclusive) *amintil*; 2. *amuntil*; 3. *hera*.

A further extension of Number is also made by the addition of *bates* or *mbutes*, all, to the Plural forms.

These differ a good deal from the Pangkumu forms which are here given for comparison.

Sing. 1. *hina*; 2. *han*; 3. *hini*.

Dual 1. (incl.) *raro* (excl.) *nemuru*; 2. *hamuru*; 3. *raro*.

Plur. 1. (incl.) *riti* (excl.) *nemdi*; 2. *hamdi*; 3. *hiniri*.

The Aulus *ru*, Pangkumu *ru*, in the Dual is the numeral two. Aulus *til* in the Plur. is three, though if used as a trial it requires the repetition of the numeral; 1. *antil* *antil*, *amintil* *antil*; 2. *amuntil* *antil*; 3. *hera* *antil*.

Shorter forms of the Personal Pronouns are used as the object of a verb or after some prepositions. These are written as suffixes:

Sing. 1. *-ein*; 2. *-egco*; 3. *-ena*.

Plur. 3. *-cera*, *-ru*.

¹ "The Melanesian languages;" Rev. R. H. Codrington, D.D., Oxford, 1885.

² "Three New Hebrides languages;" Rev. D. Macdonald, Melbourne, 1889.

Examples: *agcolein*, pay me; *agcolegeo*, *agcoleena*, pay thee, pay him.

These pronouns are used when a noun is the object. *Nelag anrapse-ra neatim*, the wind has destroyed them, the yams.

Personal pronouns suffixed to nouns and equivalent to possessive pronouns are:—

Sing. 1. -*gk*; 2. *m*; 3. -*na*, *n*.

Dual. 1. (incl.) -*marua*; (excl.) -*marna*; 2. -*marua*; 3. -*rua*.

Plur. 1. (incl.) -*atil*; (excl.) -*mintil*; 2. -*mantul*, -*mful*; 3. *ra*, -*ar*.

Examples:—*Nelik*, my heart, *nelim*, thy, *nelna*, his, *nelantaru*, *nelantil*, *nelamarun*, *nelamunti*, our, *nelamuna*, *nelamuntul*, *nelamtul*, your, *nelara*, *nelera*, their. *Konik*, my face, *konim*, *kon*, *konar*. (Dialect, *nahogk*, *nahom*, *nahow*.)

2. Demonstrative Pronouns.

This, *navi*; that, *namugk*. These are evidently names of positions, and as nouns take the articles. See adverbs.

3. Interrogative Pronouns.

For persons. *Hase*? who? *Hase ar-asap*? who are dancing?

For things. *Nepah*? what? *na membe*? where.

These words are in grammatical construction nouns. *Ha* in *hase* being the particle (pers. article or demons.) seen in the personal pronouns *henu*, *hera*, and *ne* in *nepah*, the demonstrative. *Se* and *spah* are the common Melanesian *sei* and *sasa*. *Membe* without the article is used as an adverb, where?

4. Indefinite and Distributive Pronouns.

Some, any, *sinde*; few, *surwakis*; many, *besogk*; much, *pagapag*; more, *inn*; all, *butes*; everyone, the whole, *kaskass*.

V. POSSESSIVES.

Only one word appears in use as a possessive noun, and is used with all nouns of the second class. The distinction usually made between near and remote relation, food and drink, has not been observed. The word used is *ta*, which is also found as a preposition. This may be the *ta* of Florida, a preposition of general relation.¹ With the personal suffixes the forms given are:

Sing. 1. *tuhnu*; 2. *tahegeo*; 3. *tahan*.

Plur. 1. *tuhamintil*.

Mr. Leggatt also gives *batin tukunu*, my head for sale; *batik*, my own head. Cf. the Fiji *noqu ulu*, *uluqu*.²

¹ "Melanesian languages," p. 159.

² "Melanesian languages," p. 143.

VI. ADJECTIVES.

1. A few pure adjectives are found. *Embu*, good (Epi *ba*), *esamp*, bad.

2. *Prefix*: The conditional prefix *ma* appears as *me* in *meraus*, heavy; *memer*, light; *mepila*, cracked; *mokot*, broken.

The prefix *ta* is seen in *taramp*, grown; *temais*, far.

3. Adjectives follow the noun which they qualify.

VII. VERBS.

1. *Verbal Particles*.—

These change with number and person.

Sing. 1. *ne*; 2. *u*; 3. *ti*.

Dual. 1. (incl.) *tur*; (excl.) *mar*; 2. *mar*; 3. *ar*.

Plur. 1. (incl.) *til*; (excl.) *mil*; 2. *mul*; 3. *ar*.

These are more like the Ambrym and Epi particles than the Pangkumu.

	Ambrym.	Bieri, Epi.	Pangkumu.
Cf. Sing. 1.	<i>na</i>	<i>ne, na</i>	<i>ma</i> .
2.	<i>o</i>	<i>ku</i>	<i>mo</i> .
3.	<i>ne</i>	<i>ti</i> (future)	<i>mi</i> .
Plur. 1. incl.	<i>yi</i>	<i>te</i>	<i>ruma</i> .
1. excl.	<i>ma</i>	<i>me</i>	<i>dima</i> .
2.	<i>mi</i>	<i>ke</i>	<i>toma</i> .
3.		<i>le</i>	<i>rama</i> .

The particles have no temporal force. Past time is shown by the adverb *usu* (Estate *sua*, already) and future by the word *bageea*, following the verb.

Rev. T. Leggatt thus gives the verb "to go," *pas*.—

	Singular.	Dual.	Plur.
Present	{ 1. <i>nepen</i> 1. (incl.) <i>anurua turpen</i>	1. (incl.) <i>antil tilpen</i> .	
	2. <i>upen</i> 1. (excl.) <i>amarua marpen</i>	1. (excl.) <i>amitil mulpen</i> .	
	{ 3. <i>tipen</i> 2. <i>amurua murpen</i>	2. <i>amustil mulpen</i> .	
	3. <i>ororua orpen</i>	3. <i>hera arpen</i> .	

Future—*usu nepen bageea*. I shall go.

Past—*usu nepenu*. I have gone.

The particles are sometimes omitted, at other times they take the place of the pronouns. *Nelag anrupera nentim*, *mil meraghaskos*, the wind has destroyed the yams, we are hungry.

The negative is *se*; *mil se mucus*, we do not make.

2. *Prefixes*.—The common *Causative* does not appear, except with the numerals, but the verb *muce*, to do or to make, is used in its place; *muce ti lice*, to try, cause to see; *muce ti oke*, to strengthen, make strong. The *Causative* is often a different word: *ageasi*, to eat; *asake*, to feed. The *Reciprocal* appears to be *ur* (the Banks Island *var*) with reduplication; *urmanapsi urua*, they love one another; *urlistis urua*, they see one another.

The prefixes *ma* and *te* have been noticed under adjectives.

3. *Suffixes*.—The terminations which give a transitive force to the verb are not conspicuous, but *si* or *se* is frequently used; *antag*, weep; *tagsi temes*, weep for his father; *urah*, fall, *urahse*, upset, capsizes; *iapiap* deceive; *niapseyco*, I deceive you. *Ana* or *au* is also used; *ne una na nestim*, I work at yams; *ne men au egco*, I laugh at you.

4. *Reflective* action is expressed by the pronouns simply: *ne lis-n*, I see myself.

5. *Reduplication* gives the idea of repetition, or continuance. *Ti pen*, he goes, *ti penepen*, he walks; *cake*, to sing, *cakake*, to keep on singing; *sur*, to talk, *surur*.

6. *Compound Verbs*.—The verb *bisa*, *bosa*, know or understand, with *lis*, see, and *eurogo*, hear, forms the compounds *lisembisa*, to perceive or know; *eurogobisea*, to understand or know (as a language).

VIII. ADVERBS.

1. *Interrogative*. *Negesa!* when? *Neubé!* where? *Mobah!* how? *Mepah!* why? *Negesa u buks Pangkumu?* when do you go to Pangkumu?

Negesa and *Neubé* are plainly nouns with the article, the Sesaknanese (*nangasi*) and *ceo*, Mota anesa and *ceea*, both common words in Melanesia. *Obah* and *epah* in *mobah*, *mepah* are the common *sara?* what?

2. *Time*.—*Bakabokol* (with causative prefix) at once, immediately; *tuwa*, the day after to-morrow; *abakal*, to-day.

3. *Place*.—*Akol*, *til*, here; *wugk*, there; *mor*, yonder.

4. *Manner*.—*Lahase*, like; *ee*, yes; *ao*, no.

Many adverbs of manner have a suffix *-ase* or *-se*; *pagase*, truly; *eurarase*, painfully; *merse*, well in health.

IX. PREPOSITIONS.

1. Only one simple preposition appears in the notes. This is *te*, the same word as the possessive. It is used to express general relation like the Florida *ta*, and is used with the suffixed pronoun; *asomajk ten Aulua*, a man of Aulua; *hambin ten nemis*, wing of a bird; *naké tahambat tencobise Sisin*, a ship has anchored at Sasun Bay; *nisswa ten balambal*, a pig's house. *Te* or *ta* is also used to denote the people belonging to a place; *hase ur asap?* to Raki; who are dancing? the people of Raki.

2. Other prepositions are *lelecel*, inside; (the Mota *alele*) *lelecel issua*, inside the house; *abub*, outside; *u tebut abub*, come thou outside; *lacoakte*, over; (Cf. Mota, *raco*); *reukakte*, under.

X. CONJUNCTIONS.

Only one conjunction appears. This is the copulative, *na*, *ha*, and.

XI. NUMERALS.

1. *Cardinals*.—One, *bokol*; two, *e urua*; three, *e til*; four, *e mabis*; five, *elima*; six, *ro bokol*; seven, *roku ruu*; eight, *rok til*; nine, *rokabis*; ten, *sagabul*.

The digits of the second hand are marked by *rok*, which corresponds to the *lu* of Efate, *li*, *lu* of Ambrym, the introduction of *k* being euphonic. With the first five numerals the verbal particle is *e*. The Pangkumu numerals are: one, *oko*; two, *heru*; three, *e tir*; four, *he uej*; five, *e rim*; six, *rub tir*; seven, *rub ru*; eight, *rub tar*; nine, *rup e*; ten, *sagabul*.

2. *Ordinals*.—These are apparently the same as the multiplicative, but in Mr. Leggatt's list are written with *roka*, *ra*, instead of *baka*, *ba*. Third, *ruktil*; fourth, *rakebis*; fifth, *ruko lima*; sixth, *rukubol*; seventh, *varokurna*; eighth, *varoktil*; ninth, *varokbu*; tenth, *rasugabul*.

First is *consuktu*, second, *nesua*.

Another and probably more usual way is to count: *bituu*, first; *tarika*, one in the middle; *bitah*, last. This latter method is found in Epi (Baki) *beamu*, first; *lie*, next; *torow*, last.

3. *Multiplicatives* are formed with the causative *ba* or *baka*. Once, *bakubokol*; twice, *bakurua*; thrice, *bakutil*, etc.; sixth *ba robokol*.

XII. EXCLAMATIONS.

Of astonishment *Wekus!* *wuh!* Of great astonishment *gurahi!* Hear! *rogo!* There is also a habit of clucking when examining any new or strange thing.

XIII. EXAMPLE.

The Aulua Paternoster.

1. Teta tahamintil intoko lemanv mor.
2. Nahsem bombai bagcea.
3. Batic venua tipene bagcea.
4. Umacea entamtam intoko uten vevahte, labase timacea intoko lemay mor.
5. Ulevesak amintil abakal, nohamintil milcani abakal.
6. Uieve-toane nesah umwi tahamintil, labase mileve-toane asmamuius.
7. Metohse amintil mil se macee nesah umwi, ulevencule amintil une nesah umwi.
8. Egeo namal, lambonugkas, mesilembar. Amen.

1. Father our abiding in Heaven yonder.

2. Thy name holy shall be.

3. Kingdom (lit., *batic-venua*, country of chief) come shall,

4. Make thy-will on earth below like it-is-done-in-heaven yonder.
5. Give us to-day our-food we-eat to-day.
6. Cast away things bad our-like we cast away (bad things of our) enemies.
7. Prevent (lit., frighten) us (so) we not do thing bad, bring back us from things bad.
8. Thou chief, powerful, glorious. Amen.

VOCABULARY OF THE AULUA DIALECT, MALEKULA.

[Words marked P. are Pangkuma dialect.]

Afraid, <i>metah</i> .	Carry, <i>tjanta</i> .
all, <i>butea</i> .	chief, <i>namal</i> .
all day, <i>tumbasai</i> .	child, <i>netina</i> .
and, <i>na</i> , <i>hi</i> .	chip (e.) spouse,
any, <i>sindé</i> .	chisel, <i>nakepos-pose</i> .
arrow, <i>netumbal</i> . P. <i>anai</i> .	clean, <i>bunkabunk</i> .
ashes, <i>nier-mes-hamp</i> (see fire).	cloud, <i>borimbor</i> . P. <i>hemaramar</i> .
ask (questions) <i>usé</i> ; (ask for something) <i>gerex</i> .	club, <i>nambor</i> .
Bad, <i>esimp</i> , <i>usuci</i> .	coconut, <i>nukala</i> .
banana, <i>neses</i> .	cold, <i>nseloko</i> .
basket, <i>gonta</i> .	come, <i>bene</i> .
bay, <i>tescolose</i> .	cracked, <i>sepila</i> .
beard, <i>nepol-mes-mibrin</i> .	crooked, <i>kumbakambul</i> .
begrudge, <i>metoksa</i> .	cut, <i>aycum</i> .
belly, <i>tambana</i> .	
bird, <i>nenin</i> .	Dance, <i>asap</i> .
bite, <i>kaskas</i> .	dark, <i>nseligo</i> .
black, <i>niel</i> .	dawn, <i>ceremuse</i> , <i>balambal-mokot</i> .
blind, <i>metis-embar</i> .	day, <i>nata-arien</i> (lit., country-light). P. <i>nts-riu</i> .
blood, <i>nerisi</i> .	deceive, <i>isipisp</i> .
blow (of wind), <i>slay</i> .	destroy, <i>ansipae</i> .
boat, <i>naki</i> .	die, <i>emis</i> , <i>enisembetum</i> (really dead).
body, <i>nsrambansla</i> .	dirty, <i>niel</i> .
bone, <i>bologkout</i> .	do, <i>mues</i> .
born, <i>ts</i> , <i>bijsu</i> .	Dog, <i>nakuli</i> .
lesson, <i>nisis</i> , <i>membia</i> .	door, <i>bambetif</i> .
low (warrior), <i>nesai</i> . P. <i>nehus</i> .	drink, <i>min</i> .
boy, <i>tamare</i> .	
branch, <i>nebaschte</i> .	Ear, <i>arsina</i> .
breast (woman's), <i>nisis</i> .	eat, <i>agani</i> .
bring, <i>levenbene</i> .	Egg, <i>nsendeluk</i> .
broken, <i>mokot</i> .	evening, <i>nuta-arabirab</i> .
brother, <i>atsina</i> .	eye, <i>metina</i> .
burn, <i>cor</i> .	
bury, <i>durse</i> .	Face, <i>kesin</i> .
butterfly, <i>care</i> ,	Fall, <i>tilit</i> , <i>tursh</i> .

far, <i>tenuis, tenuis.</i>	Kill, <i>atrapas.</i>
father, <i>temen,</i> (voc.) <i>teta.</i>	know, <i>lisembawa, enogolisa.</i>
feather, <i>nebalukto</i> (lit., hair of fowl).	
feed, <i>asake.</i>	Land, <i>netan.</i>
female, <i>tambaluk.</i>	large, <i>tumbon.</i>
few, <i>carnakis.</i>	last, <i>bitah.</i>
finger, <i>corcoia-verua.</i>	laugh, <i>mene.</i>
fire, <i>nokamp.</i>	leaf, <i>wrahte.</i>
first, <i>hima.</i>	lie (v.), falsehood (n.), <i>bugre.</i>
fish, <i>sika.</i>	light (not heavy), <i>memer.</i>
fish-hook, <i>nikri-taptrap.</i>	lightning, <i>sembeli.</i>
fishing line, <i>cererere.</i>	like, (a.) <i>lalase.</i>
flesh, <i>verambanta.</i>	lip, <i>nakula-hogont.</i>
flood, (n.) <i>nelap</i> (v.) <i>elap.</i>	live, <i>maur.</i>
flow, r., <i>merahite.</i>	long, <i>nu-tuk.</i>
fly (n.) <i>nelag.</i>	louse, <i>nahut.</i>
food, <i>naragan.</i>	love, <i>maps.</i>
foot, <i>neluan.</i>	
fowl, <i>neto.</i>	Make, <i>mucet.</i>
friend, <i>sila.</i>	male, <i>teta.</i>
fruit, <i>vanakte.</i>	man, <i>asamagk.</i>
full, <i>embura.</i>	many, <i>besoqk.</i>
	most, <i>nelinip-nesar.</i>
Garden, <i>telata.</i>	mat, <i>tipse.</i>
give, <i>sake, leresak.</i>	middle, <i>luriku.</i>
go, <i>ember, pes.</i>	moon, <i>ambisia.</i>
good, <i>embu.</i>	more, <i>isuu.</i>
gorgeous, <i>merilombar.</i>	mosquito, <i>tongas.</i>
grown up, <i>tarasip.</i>	mother, <i>gansen,</i> (voc.) <i>nina.</i>
	mountain, <i>konkogota.</i>
Hair, <i>nepolina.</i>	mouth, <i>bagont.</i>
hand, <i>verna.</i>	much, <i>pagapag.</i>
hard, <i>ceke.</i>	
head, <i>bafine.</i>	Name, <i>nahsen.</i>
hear, <i>enrogo.</i>	neck, <i>tarnugant.</i>
heart, <i>risusins, neli, nela.</i>	net, <i>reverap.</i>
heaven, <i>nemay.</i>	new, <i>belm.</i>
heavy, <i>merano.</i>	night, <i>nata-meligo</i> (lit., country dark).
here, <i>ul, iakal.</i>	no, <i>ao.</i>
holy, <i>bombai.</i>	nose, <i>gunsenda.</i>
hot, <i>kambahamb.</i>	
house, <i>nimura.</i>	Old (time) <i>tui</i> : (in age or growth)
hungry, <i>meragkarkas</i> (lit., inside biting).	<i>tarasip.</i> P. <i>tui, turumb.</i>
husband <i>asunu</i> (see wife).	over, <i>larahite.</i>
	outside, <i>abub.</i>
Immediately, <i>bakabokot.</i>	Paddle (n.), <i>nepot.</i>
inside, <i>leleceli.</i>	painfully, <i>enararate.</i>
island, <i>narmu.</i>	pay, <i>ngcole.</i>

pig (<i>m.</i>) <i>nambsi</i> , (<i>f.</i>) <i>halambal</i> ,	stand, <i>indu</i> .
pigeon, <i>nimin</i> (<i>lit.</i> , bird).	star, <i>mow</i> .
pit, <i>numbul</i> .	stay, <i>intoko</i> . P. <i>tok</i> .
plant (<i>v.</i>) <i>harokme</i> .	stone, <i>usit</i> .
powerful, <i>lumboungkas</i> .	storm, <i>nelag mele</i> , <i>nelag lambon</i> .
prevent, <i>metohse</i> .	straight, <i>mentament</i> .
properly, <i>pogase</i> .	strike, <i>ticea</i> , <i>tampsea</i> , <i>antica</i> .
Rain, <i>nusa</i> .	sugar cane, <i>actif</i> .
rat, <i>goba</i> .	sun, <i>niel</i> .
red, <i>niel</i> .	sweet, <i>carahar</i> .
rent, torn, <i>menterenter</i> .	
rise, <i>maruh</i> .	Take away, <i>levemben</i> .
road, <i>havila</i> .	talk, <i>sur</i> .
root, <i>bulukte</i> .	taro, <i>buagk</i> .
rope, <i>noko</i> .	tear, (<i>v.</i>) <i>earasea</i> .
run, <i>anrup</i> .	that, <i>namugk</i> .
Sail (<i>v.</i>), <i>hambin</i> , <i>harina</i> (<i>see</i> <i>wiuf</i>).	there, <i>muigk</i> .
salt, <i>netis</i> (<i>lit.</i> , sea).	thing, <i>nemik</i> .
sand, <i>tambonin</i> .	this, <i>navil</i> .
save, <i>levencule lemoris</i> (<i>lit.</i> , bring back from Hades).	throw, <i>tuane</i> .
scissors, <i>nahagro</i> .	thunder, <i>durur</i> .
sea, <i>netis</i> .	tie (<i>at end</i>), <i>malsea</i> .
see, <i>lis</i> .	tie (<i>a knot</i>) <i>butaganea</i> . P. <i>mbutocini</i> .
seed, <i>nahukte</i> .	tie (<i>bandage on sore</i>), <i>bagkwa</i> .
sell, <i>agecole</i> .	P. <i>mbuge</i> .
shoot, <i>binea</i> .	tongue, <i>lemen</i> .
shore, <i>abi</i> .	tooth, <i>nelfant</i> .
show, <i>tipsenea</i> .	torn, <i>menterenter</i> .
sing, <i>cake</i> .	tree, <i>naki</i> .
sister, <i>rabilia</i> .	truly, <i>pagase</i> .
sit (<i>on ground</i>), <i>ambabok</i> .	turtle, <i>ura</i> .
sit (<i>on seat</i>), <i>sagcali</i> .	
skilful, <i>metem</i> .	
skin, <i>nakalukte</i> .	
sky, <i>nemar</i> .	
sleep, <i>ien</i> .	Under, <i>veralbe</i> .
small, <i>kahns</i> .	understand, <i>bisea</i> .
smoke, <i>nahamp-basu</i> (<i>lit.</i> , fire dust).	
snake, <i>ummat</i> .	Voice, <i>nestilono</i> .
soft, <i>bokombokomip</i>	
some, <i>sinde</i> , <i>nugane</i> .	Walk, <i>penepen</i> .
speak, <i>sur</i> .	wall (<i>fence</i>), <i>numbuko</i> .
spear, <i>sare</i> .	water, <i>nabui</i> .
spirit, <i>nemanta</i> .	wave, <i>tarar</i> .
spittle, <i>numbetim</i> .	weep, <i>antag</i> .
	well (<i>done</i>), <i>embuss</i> .
	well (<i>in health</i>), <i>nurse</i> .
	white, <i>embuss</i> .
	whole, <i>haskuse</i> .
	wife, <i>osunu</i> (<i>see husband</i>).
	wind, <i>nelag</i> .

wing, <i>hambin</i> .	Yam, <i>sestim</i> .
wish, <i>mahape</i> .	yellow, <i>togiyo</i> .
woman, <i>tumbaluk</i> .	yes, <i>ee</i> .
work (in garden), <i>uma</i> . <i>O</i>	yonder, <i>mor</i> ,

VOCABULARY OF THE LAMANGKAU DIALECT, SOUTH WEST BAY,
MALEKULA.

These words were obtained by Rev. T. W. Leggatt, from Masig, a lad who had been taken from home by a trader, but made his escape and found his way to Aulua. The only specimen of this language hitherto known is a short vocabulary of 38 words and numerals in the Journal of Commodore Goodenough. These are added to the present notice in square brackets [] when different. The letters here used are those of the Aulua alphabet.

I. NUMERALS.

One, *ise*; two, *ers*; three, *etil*; four, *esos*; five, *elim*; six, *sau-se*; seven, *sau-su*; eight, *sau-til*; nine, *sau-rei* [*taurerei*]; ten, *gabul* [*langabul*].

II. PRONOUNS.

<i>Kinegk</i> , I.	<i>tigkinagk</i> , mine.
<i>Eugk</i> , thou.	<i>tougk</i> , thine.
<i>Amatag</i> , he.	<i>tamatag</i> , his.

III. SENTENCES.

Nau ihop, the rain is falling.
Nau ihop imagk, the rain is over.
Ninal issa, the sun shines.
Nerul iar, the moon shines.
Metur mele leium, to sleep in the house.
Ra mis metu, they drink coconut.
Sa urog ure neiau ambat tilere kinagk, I don't know the name of the foreigner who took me.

These show verbal particles *i*, *ti*, *ra*. Article *ue*, *ue*. Prep. *te*. Cf. Aulua.

IV. VOCABULARY.

Adze, (shell) [talei mbo] (see iron)	Bamboo [nambrr] (probably = fuel).
arrow [<i>tu-mbul</i>], (Aulua, <i>nelun-bal</i>)	banana, <i>nigkut</i> .
axe (steel) [talei metan] (see iron).	belly, <i>sestim</i> .
	black, <i>metimet</i> .
	boat, <i>maigk</i> .

bowl [adrab].	Man, <i>naturut</i> .
breadfruit, <i>bataf</i> [<i>mbelep</i>].	moon, <i>peend</i> .
breast, <i>morogkon</i> .	mo <i>g</i> [<i>bangon</i>].
Cackle (v.), <i>i kok</i> .	No., <i>i</i> [<i>sisi</i>].
calico, <i>navar-tambat</i> .	nose, <i>ngunjien</i> .
cat, <i>nelambut</i> [<i>nalambut</i>].	Paddle, <i>nobo</i> .
coconut, <i>metu</i> .	painful, <i>i ror</i> .
Dance, <i>sap</i> .	pig (f.) <i>embole</i> , (m.) [<i>mbrusai</i>].
dark, <i>neligk</i> .	pudding, <i>taptap</i> .
death, die, <i>i mes</i> .	Quiver [<i>melip</i>].
dog, <i>ambur</i> .	Rain, <i>naue</i> , (e.) <i>i hop</i> .
drink, <i>min</i> .	reed, <i>naruanci</i> .
Ear, <i>teligan</i> .	red, <i>niel</i> .
earth, <i>nitan</i> .	ridge-pole, <i>neium-bau</i> .
eye, <i>nemalan</i> .	run, <i>i rop</i> .
Face, <i>wogen</i> .	Sea, <i>nitis</i> .
fire, <i>na-namp</i> [<i>amberr</i>].	shade, <i>nemolemol</i> .
float (e.) <i>i al</i> .	shine, <i>sin</i> , <i>ar</i> .
flowing, <i>varavur</i> .	side, <i>iricilal</i> .
fly, <i>nelig</i> .	skin, <i>na-anule-n</i> .
foot, <i>nembulan</i> .	sleep, <i>metur</i> [<i>mirmir</i>].
foreign, <i>ambat</i> .	small, <i>icare</i> .
fowl, <i>netau</i> .	smoke, <i>rita-la-amp</i> .
Good [<i>i lei</i>].	sore (n.) <i>map</i> .
Hair, <i>sifilis</i> .	star, <i>nomoser</i> .
hand, <i>nevarin</i> .	stone, <i>nevet</i> .
head, <i>inbatin</i> .	sun, <i>nusal</i> [<i>linal</i>].
here, <i>eit</i> .	swell (e.) <i>i timp</i> .
house, <i>neium</i> .	swim, <i>i log</i> .
house, club, or gamal [<i>namel</i>].	Taro, <i>biagk</i> [large, <i>nahalan</i>].
Image [<i>itemde</i>].	tongue, <i>nelambungan</i> .
iron, <i>telei</i> .	tooth, <i>nelson</i> .
Knife, <i>ne-imes</i> .	Water, <i>nuei</i> .
Lalli [<i>mbulais</i>].	white, <i>metus</i> .
large, <i>imban</i> .	wind, <i>neleg</i> [<i>nalang</i>].
	woman, <i>momo</i> .
	Yam [<i>kalkul</i>].

In the vocabulary will be noted the article, *ne*, *na*, *no*, *ia*; the verbal particle *i*. Names of parts of the body have the pronoun -*a* (3rd sing.) suffixed. The prefix of condition *me* is seen in words for white, black, red. In *imes*, knife, *i* is perhaps the instrumental prefix. Elate *nuei*, to pierce.

Nephrite Hatchet from British New Guinea.

By A. B. MEYER, M.D., H.F.A.I.

As far back as the year 1847 J. B. Yukes reported jade hatchets from the neighbourhood of the Fly River in South New Guinea. He says ("Narrative Voy. Fly," i, p. 277): "These [stone hatchets] were similar to those of the South Sea Islanders———some made of jade. . ." But it has never been proved, as far as I am aware, that these hatchets really consisted of nephrite or jadeite. Again, in the year 1882, G. Seelhorst ("Australien," p. 396) speaks of "Nephritbeile" from S.E. New Guinea, but the determination of the substance in this case is even much less trustworthy. Quite recently I found in the "Colonial Report, No. 37, on British New Guinea for 1890-1891" (Parliament Papers), p. 41, the following remark: "Mr. Jack classes the jads of Collingwood Bay with that of New Zealand." This induced me to ask Sir Wm. MacGregor for a sample, that it might be ascertained, whether this find were of that valuable hard material; and the Governor of British New Guinea was so kind as to send me a hatchet of this category from Collingwood Bay, "not a good specimen, but small and light for postage."

Collingwood Bay is situated on the N.E. coast of the extreme S.E. peninsula of New Guinea, opposite the D'Entrecasteaux Archipelago.

The hatchet is 11·5 cm. long and 3·2 cm. broad, thin and with an uneven surface, showing a boulder character conspicuously on both sides, only roughly polished and sharpened at the cutting edge. It is of that sage green colour (R. Ridgway, "Nomenclature of Colours," 1896), also shown by some New Zealand nephrite hatchets, of which I shall speak presently. The hardness is different in different parts of the surface, in some rather soft. It is of little transparency near the edges. Specific gravity, according to Dr. Frenzel of Freiberg in Saxony, 2·92, and this, together with the other characters mentioned, removes any doubt as to its being genuine nephrite; besides, the microscopical investigation, kindly performed by Professor Arzruni of Aix de la Chapelle, proved that the New Guinea variety resembles the New Zealand one. Professor Arzruni says: "In New Zealand nephrite I had not as yet seen considerable amphibole crystals with a cross striation (Quer-gliederung), which lay in the (relatively) coarse-fibred, bent-fibred mass. But that such occur is evident from the first paper of Berwerth, who in larger fibres proved the amphibolic nature of the nephrite with the greatest certainty."

The Dresden Museum received a somewhat similar hatchet in the year 1881 from Dr. von Haast from Massacre Pa near Rangiora in the South Island of New Zealand, which I figured, described and discussed formerly (see "Jadeit und Nephrit Objekte," ii, 59, 1883, Pl. VI, Fig. 2), and this leads me to suppose that the hard and

transparent nephrite, analogous to that of New Zealand and New Caledonia, will still be found in New Guinea also.

Without doubting in the least that nephrite may be found in other localities also in New Guinea, the statement of Dr. Finsch ("Ann. Mus. Wien," 1891, vi, 208 note), "that all stone hatchets in German New Guinea from the River Sechstroh to Massilia [a coast track, about 45 miles long, immediately east of Humboldt Bay, on the north coast of New Guinea] appear to be of nephrite," requires confirmation by mineralogical investigation. As I hear from Prof. Arzruni, who had Dr. Finsch's materials in hand, several pieces are most probably jadeite; nephrite, too, may be present amongst the rest, besides green rocks, such as dense diorite and diabase. Hatchets of jadeite and chloromelanite, some with the lower specific gravity of nephrite, have already been forwarded to collections in quantities from Humboldt Bay and neighbourhood (see my work quoted, p. 51 sq., and "Abh. u. Ber. d. k. Zool. u. Anthr. Ethn. Mus. Dresden," 1890-91, No. 1, p. 39 sq.), but, as far as I know, the hatchet from Collingwood Bay, described above, is the first made known as decidedly consisting of nephrite.

Platycnemism in the British Isles.

The information with regard to "the Discovery of Platycnemic Men in Denbighshire," contributed to the "Journal of the Ethnological Society of London" (January, 1871), by Professors Busk and Boyd Dawkins, contains this prognostication by the latter writer:—"I have not the slightest doubt that platycnemism will be recognised in remains from chambered tombs in many parts of Britain, and that eventually the men found in Denbighshire will be proved to belong to a race that spread over Britain and Ireland, and a large area on the Continent." By way of helping to confirm this forecast, I beg to add a few supplementary notes, with reference solely to the British Isles.

In General Pitt Rivers' "Excavations in Cranborne Chase" (1887: Privately printed: vol. ii, pp. 206-7), it will be noticed that several of the skeletons found by him among his Wiltshire pit-dwellings exhibited marked platycnemism. Yorkshire has also recently yielded up similar specimens. In a paper on "Prehistoric Remains in Upper Wharfedale," Mr. Ernest E. Speight¹ remarks as follows:—

"Several barrows are to be seen in this part of the pastures [i.e., at the north end of Lea Green, near Old Grassington], one of which I have partially explored. I obtained an almost perfect skeleton from a central grave, besides human remains from the south and east portions of the barrow. The skeletons are remarkable for the heavy superciliary ridges, joined by frontal bars, for platycnemism, and for carination of the femora. The forehead is low, and the frontal sinus large."

Sir Herbert Maxwell supplies further evidence from Wigtownshire. In the course of excavations made in 1885, within "St.

¹ "The Antiquary," March, 1893.

Median's Cave," which is situated on the south-western shore of Luce Bay, and quite near the Mull of Galloway, the explorers discovered a number of fragments of bone, chiefly animal. These were submitted to Professor John Cleland, of Glasgow University, who, in reporting upon them, says:—

" By far the most important object is the lower two-thirds of a left human tibia, highly platyemic. The platyemic tibia is rare among races of the present day, but is got from barrows and caves both in Britain and on the Continent. They are said always to have well-marked muscular roughnesses, and this specimen has them well marked. Possibly the form indicates a light built and nimble race of men."

" What may be deduced from the scanty remains discovered within the cave," observes Sir Herbert Maxwell, "from the bones and shells mingled with pieces of stalagmite and charcoal, is that it has long been used as a human dwelling-place; that the aboriginal platyemic race lived in Wigtownshire, as in other lands, either before they were extirpated or absorbed by a more powerful invading people, or before their structural peculiarities had become obliterated by a change in their mode of life."¹

The same gentleman occupied himself in 1886 in investigating " St. Ninian's Cave," on the south-eastern shore of Luce Bay, immediately opposite the cave just referred to. The bones there found were also sent for inspection to Professor Cleland, some of whose observations appear deserving of quotation, in this connection, although they do not relate directly to tibiae:—

" *Adult Human Bones.* These, like the tibia formerly found [in St. Median's Cave, on the opposite coast], have belonged to an elderly person. They are a left calcaneum, the metatarsal of the great toe of the left foot, and the second metatarsal of a right foot. The calcaneum is 2·25 inches long, the first metatarsal 2·6 inches long, and the second metatarsal 3·1 inches long. An articulated foot with first and second metatarsals of precisely corresponding length, and the calcaneum 3·45 inches long, measures in total length 9·25 inches, and would probably have measured about 10 inches with the integuments on; and I should think these bones have belonged to a foot of that length.

" But the calcaneum of this articulated foot, like all the other calcanea which I have looked at, has very different proportions, as may be seen by comparing the breadth at different places.

	Ancient Calcaneum.	Modern Calcaneum.
Greatest breadth of tuberosity	1·1	1·6
Breadth at narrowest part of shaft	·8	1·1
Height of tuberosity	1·45	1·95

" It will be seen that the calcaneum from the cave is remarkably slender for its length; this strengthens my conviction that the platyemic tibia formerly examined belonged to a race lightly made and swift of foot."²

From the concluding sentence, it would appear that Professor Cleland has assumed that in both instances the bones were obtained in the same cave, whereas the two caves are situated on opposite sides of a wide bay. Nevertheless, it is very probable that both caves were occupied by the same race. This is the more likely since the bones of the foot, in the one case, and of the leg in the other, argue a race remarkable for swiftness of foot. It is for this

¹ " Proceedings of the Society of Antiquaries of Scotland," 1886-86, pp. 87-88.

² " Proceedings of the Society of Antiquaries of Scotland," 1886-87, pp. 129-140.

reason that (although no anatomist myself) I have quoted the second description also, though it apparently does not directly prove platycnemism.

Mr. Wm. Fraser, F.R.C.S.I., in a recent "Contribution to Irish Anthropology,"¹ furnishes additional instances of platycnemism in the British Isles.

"In the year 1880," he writes, "I made a series of measurements of a large series of crania which was obtained by me from a vast charnel-mound discovered near the village of Donnybrook, during the autumn of 1877. I described the circumstances attending this remarkable discovery in a paper at the Royal Irish Academy, and was able to determine, with some precision, that it had originated in a massacre perpetrated towards the end of the eighth century of our era, by marauding pirates—the Black Gentiles of Irish history. . . . As might be expected, the evidence obtained from these remains agreed in pointing out their early origin. Thus the bones of the leg were in numerous instances of the form termed platycnemic, or sabre-shaped, the tibia having flattened sides and sharp anterior border. This is of frequent occurrence in primitive races. The strongly-marked pilaster-form of thigh-bone, with its rough and prominent ridges for the insertion of muscles, was also common, and I likewise obtained several examples of upper arm-bones (humeri) with perforations of the articulating joint or olecranon, of considerable size. All these peculiarities, I may remark, are of frequent occurrence and distinctive of primitive interments and early races. I must refer for further details of this remarkable find to my paper in the 'Proceedings of the Royal Irish Academy' and to a special paper treating of the anatomical peculiarities observed, read before the Surgical Society of Ireland and published in the Dublin 'Medical Press.'

These instances of platycnemism in Wiltshire, Yorkshire, Wigtownshire, and County Dublin are, no doubt, all well known to anthropologists; but it is interesting to add them to the Denbighshire examples, and to suggest a further extension of the list, confining the enquiry to the British Isles.

With regard to this subject, there are one or two points which seem to invite fuller investigation. The average height of the "platycnemic men" of Denbighshire and Wiltshire was not much more than five feet. Was this also a characteristic of those of Yorkshire, Wigtownshire and Dublin? The recent discovery at Mentone shows very clearly, if nothing else does, that platycnemism is not restricted to people of small stature. On the other hand, it is associated with the dwarf race which preceded the Ainos of Japan, and with the Ainos themselves, who appear to be partly the descendants of those people. It may be further noticed that, among the Ainos, the humerus as well as the tibia, is often platycnemic. Are there any instances of this in the British Isles?

DAVID MACRITCHIE.

"Mr. Portman's Photographs of Andamanese." Mr. Maurice Victor Portman, who has now spent some years in charge of the natives of the Andaman Islands, has during his residence there devoted himself to collecting together everything that could be of

¹ "Journal of the Proceedings of the Royal Society of Antiquaries of Ireland," First Quarter, 1891, pp. 391-404.

value as a record of this interesting people. A few years ago he sent home a complete collection of the articles made by the natives. This he generously presented to the nation, and it can be seen in the Ethnographical Gallery of the British Museum. Not content with this, Mr. Portman is now occupied with a more difficult and costly undertaking. He has set himself the task of reproducing by photography, not only the physical types of the race, but every process of their industry, their postures in greeting, in sleep, the numerous styles of adornment (it cannot be called dress) proper to individuals at special times or under particular circumstances, and in fact every point that will help to preserve the features of the race for anthropologists when the race itself has ceased to exist. Mr. Portman has been at considerable expense in laying down plant and providing the necessary apparatus and material for this undertaking. He has already produced eight albums, each containing twenty-five platinotype prints, and in all cases with a printed description of the photograph beneath it. The first two volumes are confined to heads of the natives, usually, however, three-quarter face views; in the third volume each head is given in profile and full face, and on a larger scale, the prints measuring 8' x 6'; the five volumes last issued are again larger, most of them being 14" x 10". These five volumes are devoted to the arts of the Andamanese, viz.: Vol. 4. Adze and Bow making. 5 and 6. Bow and arrow making. 7. Rope making and hut building; and 8. Miscellaneous.

As a typical illustration of Mr. Portman's method it will suffice to take the series of adze making. 1. Native standing beside tree, the points whence he will obtain the adze handle being marked in red. 2. First incision made beneath the branch to be detached. 3. Second incision on trunk above the branch. 4. Native wrenching branch from the tree trunk. 5. Native seated, trimming face of branch where it was torn from the tree. 6. Native squatting, trimming back of branch. 7. Further trimming. 8. Another view, showing method of handling tools. 9. Sharpening the adze which has been used in the preceding operations. 10. Beating the bark off the newly-made adze handle. 11. Hammering (with stone) the new adze blade into shape. 12. Sharpening the same. 13. Haft and blade being completed; this shows the native splitting cane for the binding. 14. Binding on the blade with cane. 15. Fastening the cane, binding. 16. Hammering wedge to tighten blade in haft. 17. Finished adze. 18. Method of holding adze.

From this single example it will be seen that Mr. Portman's task will be neither a light nor a short one, and it is to be hoped that nothing will intervene to prevent him from completing it on the liberal scale of these first volumes.

Such a series, taken in combination with Mr. E. H. Man's monograph "On the Aboriginal Inhabitants of the Andaman Islands," published by the Institute (now, however, out of print) will form a record of an aboriginal race surpassing anything hitherto done.

Mr. Portman is presenting copies of the volumes as they appear to the Indian Government and to the British Museum (Ethnographical Department).—[C. H. R.]

"The Hibbert Lectures, 1892." By C. G. Montefiore. (Williams and Norgate.) 8vo. pp. 576. The purpose of the lectures is to give a short history of the religion of the Old Testament. The titles of the lectures are as follows: Origin and foundation of the Hebrew religion. The history of the Hebrew religion between the Mosaic age and the eighth century B.C. The prophets of the eighth century B.C. The seventh century, Deuteronomy and Jeremiah. The Babylonian exile, Ezekiel and the second Isaiah. The Restoration and the priestly law. From Nehemiah to the Maccabees, external influences and internal organisation. From Nehemiah to the Maccabees, God and Israel. From Nehemiah to the Maccabees, the law and its influence. Appendix.

"Evolution and Man's place in Nature." By Henry Calderwood. (Macmillan, 1893.) 8vo. pp. 340. "The discussion proceeds from the standpoint of Evolution of Organic life, as maintained by Mr. Darwin and by Mr. A. R. Wallace. The main objects are to trace the evidence of man's relation to the continuity of life on the earth, and to describe the distinctive characteristics of human life itself." The titles of the chapters are: Evidence for Evolution, Life in its Lower and Higher Forms, The Characteristics of Human Life, The Relations of Environment to Life, Heredity and Evolution, Sensory and Rational Discrimination, Animal and Rational Intelligence, Rational Life. The work is well indexed.

"Japan in History, Folklore, and Art." By W. E. Griffis. (Houghton, Mifflin and Co., Boston, U.S.A.). 1892. 8vo. pp. 230. This work, one of the volumes of "The river-side library for young people," deals with the subject in a popular manner. The author states in his preface, "I have told more about Kioto than about Yedo. I have sketched in outline the Japan of ages rather than of our own age. While political history is the chief theme, my aim has been to show how and why the Japanese see and think as they do. . . . Believing also that what the dignified historians write is only part of a people's true history, I have sought from their customs and folk-lore as well as from the interpretation of their artists, material with which to brighten the narrative. Fact and fiction, however, are presented in separate chapters."

"Faith Healing." By A. T. Seboeild, M.D. (R.T.S., 1892.) 8vo. pp. 128. The author is speaking of faith healing "sets aside its common and obvious reference to the soul, and speaks only of the cure of bodily diseases as the direct result of special believing prayer, with or without faith, or even Christianity, in the person cured, and with or without the anointing of oil, and the laying on of hands." The work contains a large amount of valuable information.

"People of Finland" in archaic times. By J. C. Brown. (Kegan Paul.) 1892. Svo. pp. 290. The volume describes Finland and its people, sketches of social life given in the Kalevals, legends embodied in the Kalevals, use made of the terms—myth, legend, hypothesis, and theory, myths and mythical legends, mariatta, plan and contents. Era and age of the Kalevals. Life in Finland in archaic times. Finnish homes and home life. Rural customs and habits, literature, folk-lore, and song.

"Korea from its Capital" By Rev. G. W. Gilmore, M.A. (Presb. Board, Philadelphia.) Svo. pp. 328. 25 plates. The author describes in a popular manner the country, government, language, people, domestic life, adornment, religion, and progress. The illustrations give an excellent idea of many features of the country and people.

"Some Persian Tales." Translated by W. A. Clouston. (D. Bryce, Glasgow.) 1892. pp. 126. This little work contains a selection of tales from the Persian *Mabbub al-Kalab* and other scarce Indian sources. Many of them have not been previously translated.

"Sociology based upon Ethnography." By C. Letourneau. Translated by H. M. Trollope. (Chapman and Hall, 1893.) Svo. pp. 608. The scope of the work as described by the author "was to write a chapter on Sociology—the ethnographical chapter—and we have endeavoured not to heap up our facts confusedly and without order. We have undertaken to describe the principal manifestations of human activity successively in the principal human races, connecting them as nearly as possible with similar phenomena that have been observed in animals. In nearly every case we have closed our short enquiry with an attempt at generalisation, and even of induction; but the reader will at once distinguish our own personal views from the facts which in our opinion will justify them, and may himself draw any other conclusion that appears to him to be more sound." The full scope of the work is best described by the titles of some of the sections. Book 1. NUTRITIVE LIFE. Enumeration of the Human Races. Distribution of the Human Races on the face of the globe. Food in Melanesia, Polynesia, America, Asia, Africa. Cookery. Psychology of the nutritive wants. Intoxicating substances. Stupefying or exciting substances. Book 2. SENSITIVE LIFE. On sensitive life in general. On genitalic want and on shame. Intercourse between the sexes. Genitalic aberrations. The delicacy of the senses. Clothing. On the arts in general. Dancing. Vocal music. Instrumental music. The taste for music generally. On the graphic and plastic arts. Greek sculpture. On painting. The evolution of sensitive life. Book 3. AFFECTIVE LIFE. The reflex action according to race and civilisation. On politeness and ceremonial bearing. Love for the young in animals. Abortion. Infanticide. Love for the young in humanity. Filial love. The ferocious instincts in humanity.

Benevolent sentiments. The condition of women. Warlike manners in all parts of the world. Anthropophagy in various places. Funeral rites. The idea of death. Funeral rites in Melanesia, Africa, Polynesia, America, Asia, Malay, and white races. The evolution of funeral rites. Religion in general. On the future life. The ideas on future life in various countries. The Gods. Mythology in general. Myths in Polynesia. African religions, etc. Worship and priesthood. Book 4. SOCIAL LIFE. Marriage in all parts of the world. The evolution of marriage. The family. Property. The evolution of property. Morality. The constitution of societies. The political and social evolution of the Aryans. The political and social evolution in humanity. Book 5. THE DIFFERENT DEGREES OF PSYCHICAL LIFE. Industry, armour, fire, pottery, metallurgy, agriculture, unhappy results of industry. Pure intelligence. Languages. Mathematical aptitudes. Computation of time. The ages of humanity. The work has a full index.

"The Kelt or Gael; his Ethnography, Geography, and Philology." By T. de C. Atkins. (Unwin, 1892.) 8vo. pp. 96. The work contains a large amount of information supported by vocabularies in support of the author's contention "that I have herein proved not only the ethnography, geography, and philology of the Kelt or Gael, but also that Greek and Latin are Keltic dialects."

"Medieval Lore." An epitome of the science, geography, animal and plant folk-lore and myth of the Middle Age, being classified gleanings from the encyclopedia of Bartholomew Anglicus on the properties of things. Edited by R. Steele. (Stock, 1893.) 8vo. pp. 154. This curious reprint is thus described by the Editor: "The book which we offer to the public of to-day was one of the most widely read books of medieval times. Written by an English Franciscan, Bartholomew, in the middle of the thirteenth century, probably before 1260, it speedily travelled over Europe. It was translated into French by order of Charles V (1364-81) in 1372, into Spanish, into Dutch, and into English in 1397. Its popularity, almost unexampled, is explained by the scope of the work as stated in the translator's prologue. It was written to explain the allusions to natural objects met with in the Scriptures or the Gloss. It was, in fact, an account of the properties of things in general; an encyclopedia of similes for the benefit of the village preaching friar, written for men without deep—almost without any—learning. Assuming no previous learning, and giving a fairly clear statement of the knowledge of the time, the book was readily welcomed by the class for which it was designed, and by the small nucleus of an educated class which was slowly forming. Its popularity remained in full vigour after the invention of printing, no less than ten editions being published in the fifteenth century of the Latin copy alone, with four French translations, a Dutch, a Spanish, and an English one."

"The Industrial Arts of the Anglo-Saxons." By the Baron J. de Baye. Translated by T. B. Harbottle. (Swan Sonnenschein, 1893.) 4to. pp. xii, 136. This splendidly illustrated work is designed by the author to be "a useful summary of the archæology of the Anglo-Saxon period." The various sections deal with the invaders of Great Britain in the fifth century, Anglo-Saxon arms, Anglo-Saxon fibulae, Châtelaines, or girdle hangers, Necklaces and glass beads, ear-rings, hairpins, and combs, buckles, buckets, glass vases, pottery, and Anglo-Saxon graves. A full list of the authorities referred to is given together with a table of cemeteries. The work is well indexed.

"The Yh-King," the oldest book of the Chinese and its authors. By A. Terrien de Lacouperie. (D. Nutt, 1892.) 8vo, pp. 121. The author states that "the Yh-King, the first in rank of the canonical books of China, was the result of a transformation in the twelfth century B.C. of an older work made of documents very ancient in date, and which entitles it to be called the oldest book of the Chinese." The headings of the sections are:—Description of the book. Ancient texts on the authorship. Influence of the evolution of writing. Obvious vestiges of the old text. The native interpretations. The European interpretations. Comparison of the interpretations. Methods. Translations from the Yh. Contents forgotten of the Yh. Origin of the Yh-King. Material history of the Yh King. The Yh-King and the western origin of the Chinese civilisation.

"Games Ancient and Oriental, and how to play them." By Edward Falkener. (London: Longmans, Green, and Co., 1892.) pp. iv, 306. Price 21s. A most fascinating book, clearly written and thoroughly well illustrated. In the first eight chapters the author describes the games of the ancient Egyptians; the mysteries of "Tau," or the game of Robbers, the *Ludes Lutrenicorum* of the Romans, to which reference is made by Ovid, Martial, and other writers, are for the first time explained in such a manner as to enable anyone to play it without difficulty. Two illustrative games are given, and thus Mr. Falkener has succeeded in reviving a game that was played in Egypt some 6000 years ago. Another Egyptian game, depicted on monuments of the earliest antiquity, is that called "Senat," this was at first translated chess, and afterwards draughts; but, as the author says, "certainly it could not be chess, and there is no reason whatever—except that it is not chess—for calling it draughts." Mr. Falkener identifies Senat with the modern Egyptian game of *Seega*, as played by the fellahs at the present time. It would seem that Tau was played on a board of 144 squares, twelve each way, and required sixty men, whereas for Senat boards of different sizes were used, intended for more or fewer pieces, and consequently for longer or shorter games, according to the time at the disposal of the players. The full game was played on a board having eleven or thirteen squares on each side,

but "the principle of the game consisted only of having an odd number of squares, so as to have a vacant square in the middle; and thus the same game could be played with fewer pieces, and less trouble, and less time, by reducing it to squares of nine, seven or five cells." The number of pieces required varied, therefore, from twenty-eight, for use with the smallest board, to 168 for the largest.

The other Egyptian games described are the game of the *Bowl*, the game of the *Sacred Way*, and the game of *Astep*.

The author then discusses the numerous varieties of Chess, Draughts, and Backgammon.

Mr. Falkener suggests a new and simple system of Chess Notation, which is adapted to all such games, and has certainly some advantages over the method commonly employed at the present time.

Chaturanga, or Indian Chess, is undoubtedly of very great antiquity, although its pretence to an existence of four or five thousand years has been set aside by recent critics, on the score that the Purânas, in which the earliest description of the game is found, are not of the great antiquity which was supposed. The game is played on an ordinary chess-board of sixty-four squares, by four players who have each eight men ; it bears some resemblance to modern chess, but is, in many respects, a better game, especially for two players.

Of all varieties of chess, the most intricate is the Japanese game : it is played on a board of eighty-one squares, and differs from all other games of chess in having the men all of one colour ; but for interest and intricacy combined, the palm must be awarded to Tamerlane's Chess. An amusing game is that of the Maharajah and the Sepoys, in which the King or Maharajah is invested with the powers of all the other pieces, and has to fight the sixteen pieces of the opposite colour singlehanded ; in this, if his adversary underrate his powers, he may be successful, and Mr. Falkener recommends it as "a good game of surprise to be played against a good chess-player for the first time, before he has learnt the caution necessary to be observed."

A grand game is the Chinese Wei-Ki or the Game of Enclosing, called by the Japanese Go, but it requires great practice to play it well, and Mr. Herbert A. Giles, who resided for many years in China, and has written an exhaustive essay on the subject, says that "a knowledge of this difficult game stamps a man in China as somewhat more than an ordinary person."

After describing the various games of Backgammon, amongst which, of course, Pachisi holds the most prominent position, the author proceeds to discuss the subject of Magic Squares, and concludes with a series of figures of the knight's tour on the ordinary and on the double chess-board.—[G. W. B.]

"What and where is God?" By H. B. Philbrook. (A. G. Sullivan.) 8vo. pp. xxiv, 480. The author's estimate of his

work may be gathered from the Preface, which is couched in these words :—"An apology is wanted for a book's appearance only when it is a work of no value to a community or any class of persons." The work consists almost entirely of a series of abstract propositions which Mr. Philbrook probably considers axiomatic, as he makes no real attempt to prove his statements.

"**The Testimony of the Teeth to Man's place in Nature.**" By F. H. Balkwill, V.P.O.S., L.D.S. (Kegan Paul, 1893.) pp. 240. The titles of the chapters are :—On perception; Human and Brute intelligence; Comparison of metaphysical and physiological methods of examining the mind; On some of the correlations between teeth and other organs in mammals; A difficulty for Darwinists; An unnamed factor in organic construction; Habit or Environment; On the evolution and geographical distribution of seals; The positive evidence of the teeth on man's line of descent; On bi-lateral symmetry in irregularities of development in human teeth; Notes on some morphological dental irregularities in some of the skulls in the museum of the Royal College of Surgeons; Flight of birds; The Bible and evolution. The work consists of essays delivered before various societies, and the author's professional qualifications fully justify the production of the book.

"**Old Rabbit, the Voodoo, and other Sorcerers.**" By Mary A. Owen. (Fisher Unwin, 1892.) pp. 310. In the introduction by Mr. C. G. Leland he states : "The real or inner nature of Voodooism is as yet almost unknown even to the learned; and I am glad that Miss Owen who has been initiated sufficiently into its mysteries to divine and grasp its full scope and nature, has carefully recorded, and will at some time publish her very extensive knowledge of the subject. Unlike the Aryan and Red Indian magic based on fasting, contemplation and 'prayer,' it relies on daring that which is horrible and repulsive, and above all in a perfectly subjective iron will." Nineteen folk-tales are given with fifty-seven illustrations.

"**Human Origins.**" By S. Laing. (Chapman and Hall, 1893.) pp. 437. "I have in this work begun with the historic period, as giving us a solid foundation and standard of time, by which to gauge the vastly longer periods which lie behind, and ascended from this by successive steps through the Neolithic and Palaeolithic ages, and the Quaternary and Tertiary periods, so far as the most recent discoveries throw any light on the mysterious question of 'Human origins.'" The titles of the chapters are : Part 1. Evidence from history. Egypt; Chaldaea; other historical records, China, Elam, Phoenicia, Hittites, Arabia, Troy and Mycene; Ancient religions; Ancient science and art; Prehistoric traditions; The historical element in the Old Testament. Part 2. Evidence from Science. Geology and palaeontology, the Glacial Period and Croll's Theory; Quaternary man; Tertiary man; Races of Mankind.

"Religion and Myth." By Rev. J. Macdonald. (Natt, 1893.) pp. 240. "This volume is an effort to put into popular form a number of facts connected with the religious observances and social customs of African tribes. No attempt is made to treat the subject exhaustively, and those who have made Ethnology a study will find in it little that is absolutely new. But the ordinary reader, who is interested in questions affecting a people slowly emerging from barbarism, may have his sympathies quickened." The chapters are headed:—Primitive man and the Supernatural; Guarding Divinity; Evolution of Deity; Sacrifice; Taboos; Expulsion of Demons; Witchcraft; Harvest festivals; Prophecy; Social usages; Acts of devotion; Myths; Woman; Courtesies of life; Dress; Reforms.

"Journal of the Polynesian Society." Vol. i. No. 3. What is a Tangata Maori? by A. S. Atkinson. The land of our origin (Fiji), by B. Thompson. The fall of Maunga-a-Pa, by Timi Wata Rimini. The occupation of the Chatham Islands in 1835 by the Maories, by A. Shand. The Samoan story of creation, by J. Fraser. No. 4. Prehistoric civilisation in the Philippines, by E. Best. The occupation of the Chatham Islands by the Maories in 1835, by A. Shand. Maori migrations to New Zealand, by W. E. Gudgeon. The Easter Island inscriptions and the way in which they are translated or deciphered and read, by A. Carroll. The Asiatic origin of the Oceanic personal pronouns, by Rev. D. Macdonald. The Line islanders, by Tutuila.

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ERRATA IN J. ALLEN BROWN'S PAPER "ON THE CONTINUITY OF THE PALEOLITHIC AND NEOLITHIC PERIODS."

Page 67, for "Lassal's" read Casalis.

.. 76, for "plane" read plain.

.. 81, for "is are supposed to mark" read *is* supposed to mark.

.. 89, for "elephas" read elephant; and for "Worms" read Worcester.

.. 93, for "stable for those objects in surface" read suitable for those objects.

.. 98, for "whole surface" read *o'd* surface.

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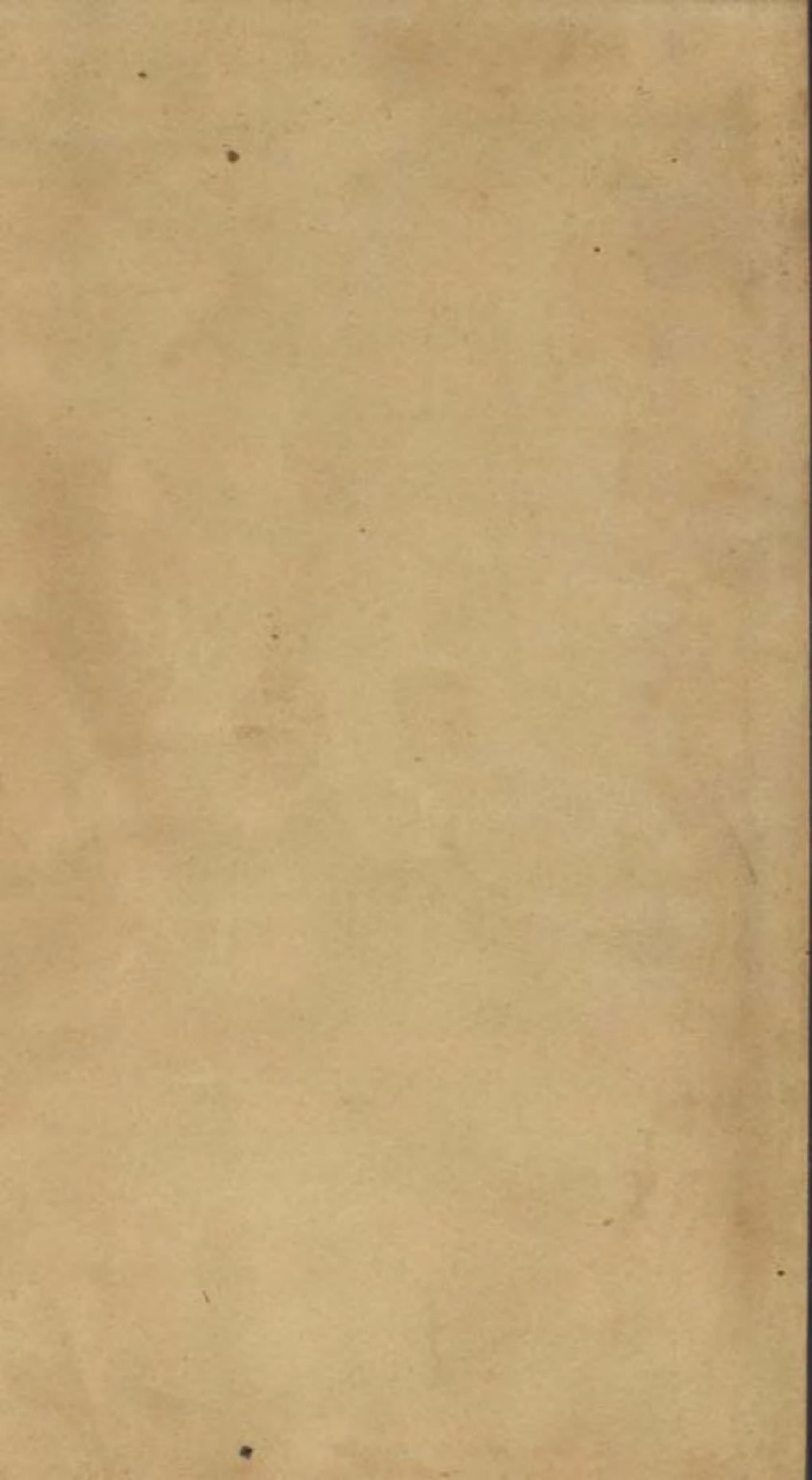
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